HITACHI

SHIBADEN

Model SV-700UC (US)
SV-700EC (ES)
Video Taperecorder

SERVICE MANUAL

Hitachi Electronics, Ltd.
TOKYO, JAPAN

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N O T I C E

This Service Manual describes the most typical product of this model. If there are any specific differences between this Manual and the servicing unit, please refer to the schematic diagram delivered separately for that serial number.

VIDEO TAPERECORDER

MODEL SV-700UC(US), EC(ES)

Service Manual

PRINCIPLES OF VIDEO RECORDING AND PLAYBACK

1. Video Recording Principles

In principle, the video tape recorder is essentially the same as the audio tape recorder. Recording the video signal on tape is by magnetic means. The frequency band width of video signal is much wider than that of an audio signal, covering DC to more than 4MHz.

Since the frequency band width of a high quality tape recorder is approx. 30Hz to 15,000Hz, that of the video tape recorder is approx. 260 times as wide, if only high frequencies are compared.

It is extremely difficult to record such a wide frequency band on tape by the same method as is employed in the audio tape recorder. In order to be able to do this, the relative speed of the tape and heads must be increased as far as possible. If the relative speed is increased under the same system as the audio tape recorder, however, a given length of tape shortens the recording time. To extend the recording time, a large quantity of tape is required.

This, however, is hardly practicable.

For this reason, Shibaden has developed a special 2-rotaly head scanning system as a means to increase the relative speed. Under this system, as shown in Fig. 1-1 (a) and (b),

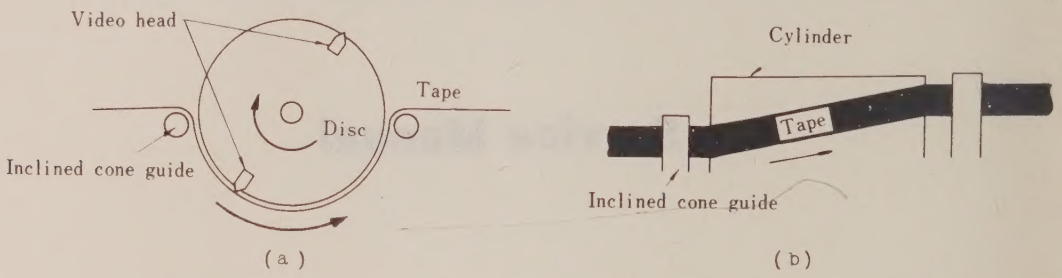


Fig. 1-1

a disc with video heads at its edges is made to rotate at a high speed, while the tape is driven in inclined form in the opposite direction with respect to the rotation of the disc. In this way, the relative speed of the heads and tape can be increased, while the tape drive speed can be slower.
If video signal is recorded in this manner, patterns such as shown in Fig. 1-2 are recorded on the tape. If the disc speed is set to 1,800rpm (30rps)-1,500rpm (25rps), one field of video signal is recorded on one track.

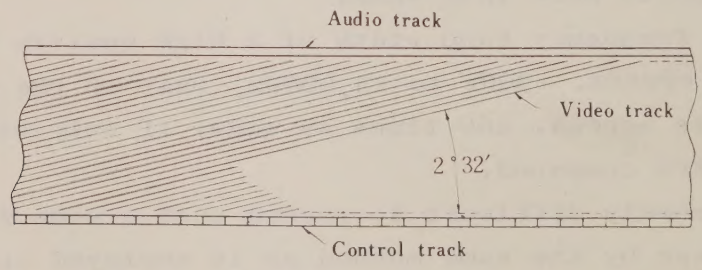


Fig. 1-2

2. Description of Track Patterns

Fig. 1-3 (a) and (b) show the relationships between the video track recorded on the tape as shown in Fig. 1-2 and the picture reproduced on the monitor.

Fig. 1-3 (a)

Detail of track pattern.
* SV-700EC (ES) only

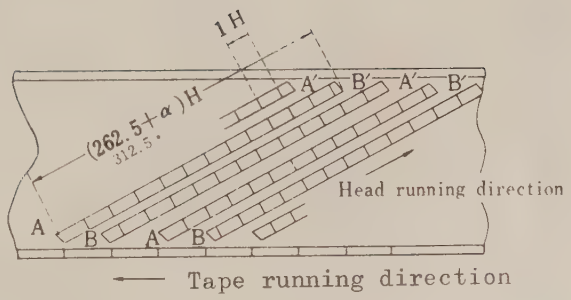
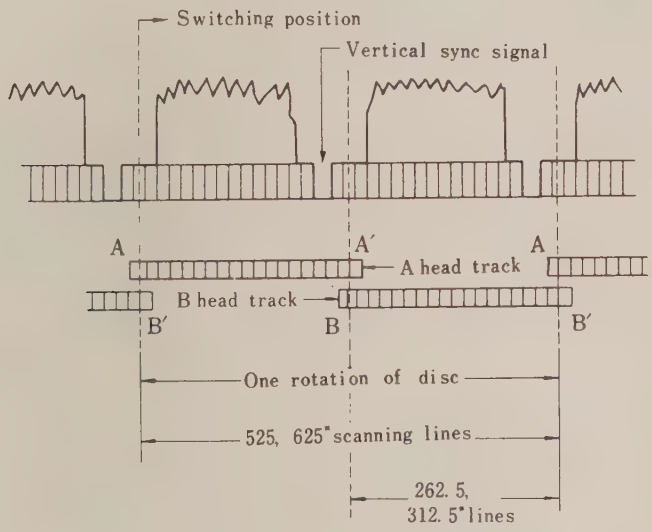
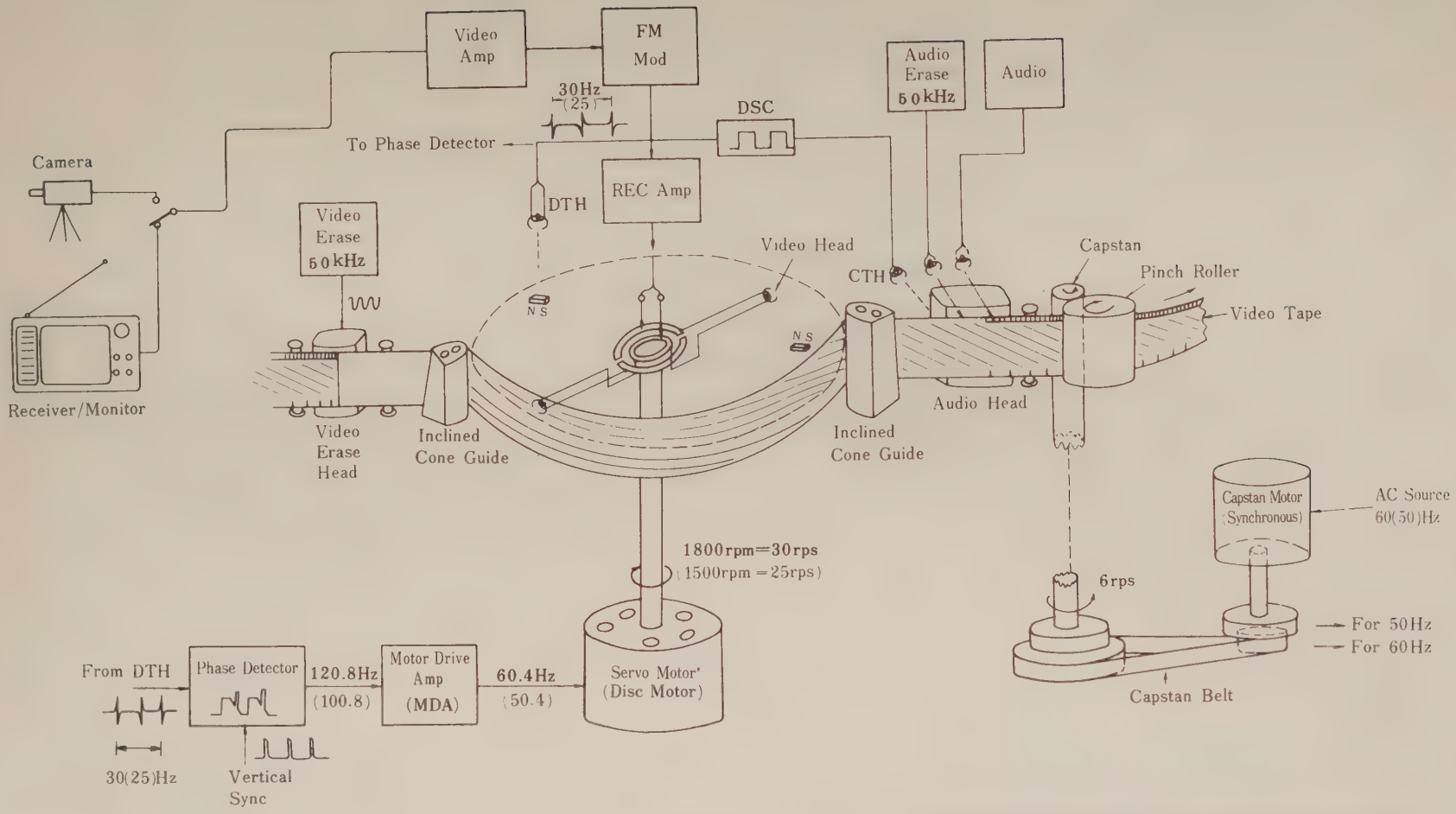


Fig. 1-3 (b)

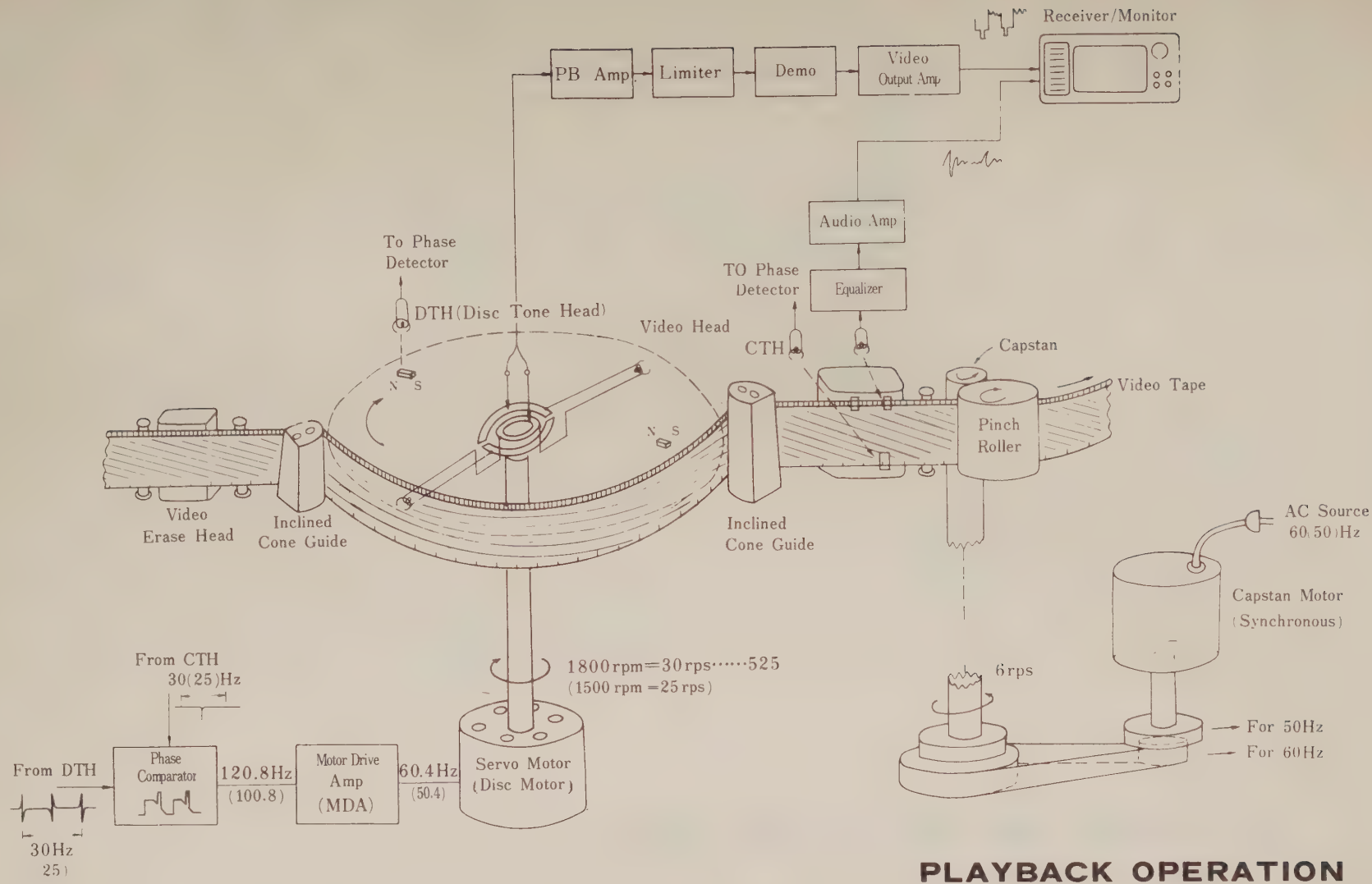
Relationships between track pattern and video signal.



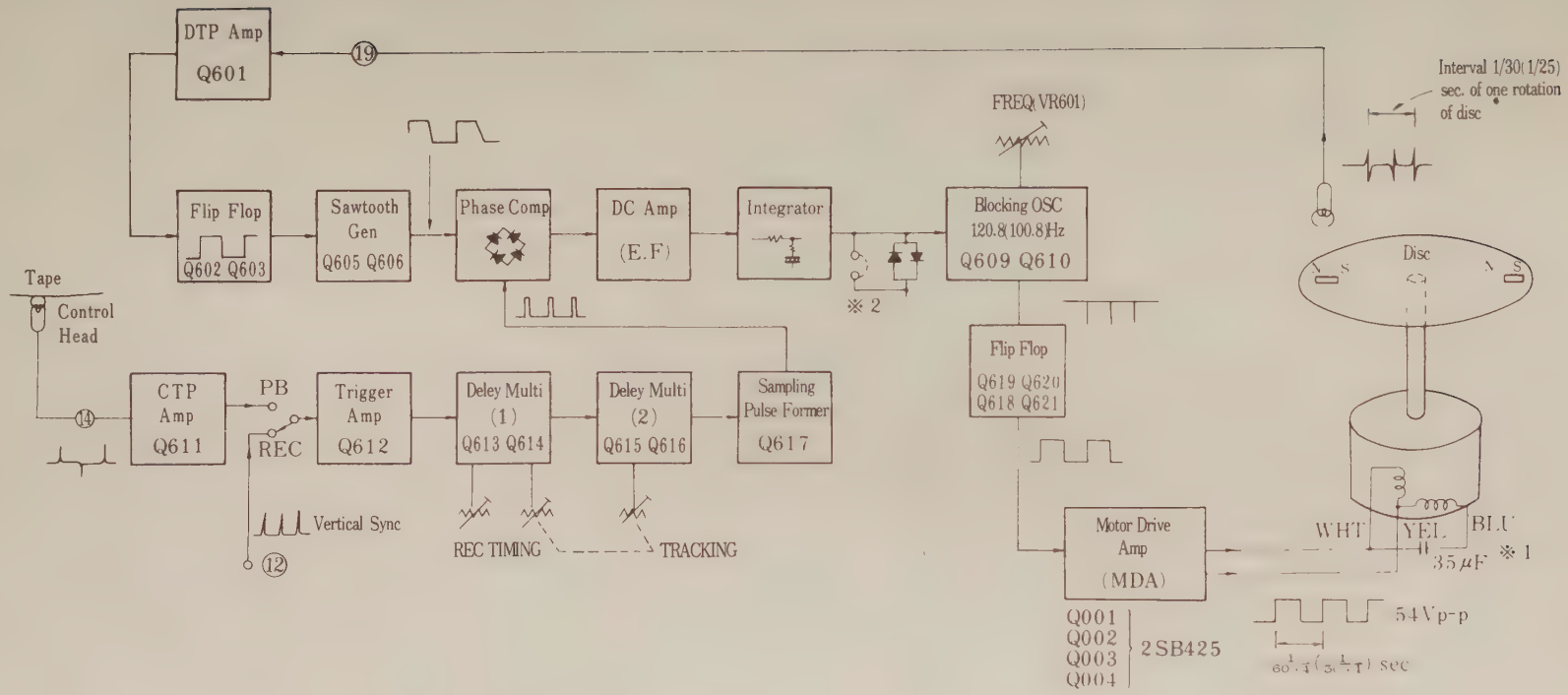
Let the two video heads mounted on the disc be respectively A and B. Now a rotation of the disc records on the tape tracks A-A' and B-B' such as shown in Fig. 1-3 (a). The relationship between the tracks and video signal is shown in Fig. 1-3 (b). If the recorded tracks are played back by the both heads A and B, head A takes care of odd-number fields and head B, even-number fields (in some cases, the reverse is the case). In this case, a perfect picture is reproduced on the monitor.
The joining of the tracks A-A' and B-B' is done during the vertical retrace period so that no interruption of video information occurs.



RECORDING OPERATION



PLAYBACK OPERATION



※ 1 35 +7μF for SV-700EC(ES)
※ 2 Short TL606 and TL607 and make servo adjustment by VR 601.

DISC SERVO CONTROL OPERATION

CIRCUIT DESCRIPTION

1. Video Circuit

If video signals are recorded directly onto magnetic tape simply by increasing the relative speed of the tape and heads, satisfactory results still cannot be obtained, because the video signal band width includes frequency components ranging from nearly DC to 3 or 4MHz.
To solve these problems, the video signals are frequency-modulated before recording. This offers the advantages of the possibility of amplitude limiting against changes in the playback output level and obviates the need for high frequency biasing.
As shown in the video block diagram, the video signals from the TV or camera are fed to the modulator (MOD) for frequency modulation, and then supplied to the video heads via the video recording amplifier, and are then recorded on the tape. On playback, the signal from the video heads is amplified by the video playback preamplifier, and fed to the demodulator (DEM), where AM components are removed by the limiter. The FM signal is then detected to recover the video information.

Modulator (MOD)

The modulator consists of a modulator circuit designed for the frequency modulation of video signals, a sync separator circuit designed for supplying vertical sync signals to the servo circuit, a meter circuit for indicating the modulation level of the carrier and an AGC circuit to control the input video level automatically for constant recording level.

In the AGC circuit, the integrated DC variable voltage produced from the original video signals via D304, D305 and C332 is used as the variable base bias of Q310.
The collector current of Q309 is controlled by Q310.
Thus, variations of the input video signals are canceled to provide the constant input level to the modulator.
In the modulator circuit, the video signals are used as the variable bias voltage of the astable multivibrator.
Thus, the oscillation frequency is frequency-modulated by the input video signals. When no signals are supplied, the oscillation frequency (carrier) is 3.3MHz.
The maximum deviation is 1.5MHz (1.3MHz) at 100% signal input level. During operation, video signals are clamped by D301 in such a way that the sync tip carrier frequency is 3.3MHz. While the variable resistor (METER VR304) of the meter circuit is adjusted so that the meter indicates 0dB at the frequency deviation of 1.5MHz (1.3MHz) ... 4.8MHz (4.56MHz) carrier frequency.
In order to supply 100% video signal to the multivibrator, the video level control (VIDEO VR102-1) is adjusted in the MANUAL mode.

In the AGC mode, variable resistor (AGC VR303) is adjusted instead of VR101-1.
The variable resistor (WHITE CLIP-VR301) is to clip off exceeding signals at 120% ... 1.8MHz (1.56MHz) to avoid saturation of the video heads. The relation between the input video signals and the frequency deviation is shown in Fig. 2-1.

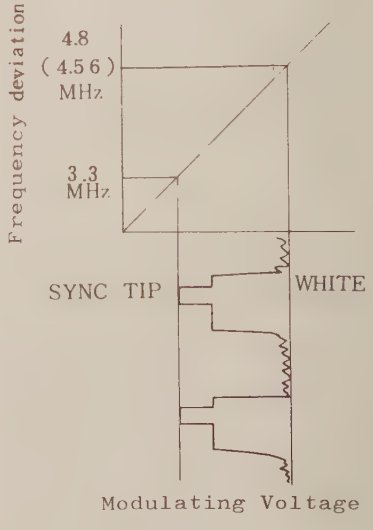


Fig. 2-1

Video head amplifier (VHA)

The VHA consists of a video recording amplifier designed to amplify and supply FM signals to the video heads, and a playback amplifier designed to amplify and supply the FM signals derived from the tape to the demodulator.
Amplifying the FM signals (1.0Vp-p to 1.4Vp-p) supplied from the modulator, the video recording amplifies supplies 20mAp-p ±5mA recording current to the video heads.
The recording current is adjusted by the input variable resistor (REC LEVEL-VR501).
The playback preamplifier amplifies the signals derived from the tape by the video heads. At the same time, it performs peaking and damping in the frequency characteristic correction circuit (PEAK-TC501, DAMP-VR502) to correct for differences in video head characteristics.
The resonant frequency of this correction circuit is adjusted to 4MHz ±0.3MHz.

Demodulator (DEM)

This unit functions to demodulate the FM signal from the modulator or the tape into the original signal.
In the E-E mode, FM signals are supplied directly from the modulator.
In the playback mode, the input is supplied from the video playback preamplifier. Any AM component is removed by the limiting amplifier, and the FM signal is detected by the pulse counter. The carrier component is blocked by a low-pass filter (cut-off frequency 3MHz).
During the vertical retrace period, switching noise occurs which would upset the horizontal sync of the monitor.
This is prevented by the use of a blanking signal obtained

by shaping the disc tone pulse (DTP) The video signal level is adjustable from 0 to 1.8Vp-p by the variable resistor (VIDEO LEVEL-VR402) located at the output of the low-pass filter. The standard output level is preadjusted to 1.0Vp-p (1.4Vp-p).

2. Servo Circuit

When rotary heads are used, they must be made to rotate accurately and regularly. In order to trace the recorded tracks accurately without misalignment when played back, a circuit is included to control the speed and phase of the head disc.
In the SV-700UC, US (EC, ES), vertical sync 60Hz (50Hz) of the incoming video is used as a reference signal during recording. The disc is phased with this signal.
At a position spaced at right angles to the video heads, a permanent magnet is mounted which produces the disc tone pulse (DTP) whose frequency is equal to the rotational speed of the head disc. This DTP is recorded simultaneously with video signals at the bottom of the tape for use as a reference signal, or a control pulse.
The closed loop servo described above controls the disc motor by comparing the vertical sync signal and DTP during recording, and the control track and DTP during playback.

Description of operation during recording

The vertical sync signal separated from the composite video signal is delivered in positive polarity to V SYNC IN (PIN 12) of the DSC board. This signal is amplified by Q612 and the next delay multivibrator triggered by its leading edge.

The width of the output pulse of the multivibrator is varied by VR602 REC TIMING. By differentiating the trailing edge of the pulse, it is possible to produce a pulse which is different in phase from the input vertical sync signal. Differentiation is accomplished by C626 and R653 which trigger the monostable multivibrator Q615 and Q616. The time constant of this stage is so selected as to reduce the frequency of the input pulse width by 1/2.

The output pulse from the collector of Q615 is differentiated by C630 and R663. The negative going portion (equivalent to the trailing edge of the collector waveform of Q615) turns on Q617. At the same time, a pulse whose frequency is equal with the speed of the disc is derived from DTP IN (PIN 19) of the DSC board, and is amplified by Q601, before it triggers the flip-flop Q602 and Q603. The outputs from the collectors of Q602 and Q603 are differentiated by C604-R606 and C606-R616 respectively and negative pulses are derived by D603 and D604.

These pulses are led from BL OUT (PIN 16) of the DSC board to the DEM board and mixed with the video signal. If the servo is out of synchronism with the vertical sync signal, it shows on the screen of the monitor, thus making it possible to see whether or not the disc motor is in sychronism with the sync signal.

The output from the collector of Q603 is fed through the emitter-follower Q604 to the control track head for recording the rotating speed of the disc during record.

Part of the output of Q604 is applied to the bootstrap circuit of the next stage to derive an ramp waveform from the emitter of Q606.

This ramp waveform is sampled by the pulse from the collector of Q617 and is then delivered to the emitter-follower Q607 and Q608.

After integration, the resulting DC voltage is applied as a variable bias to the base of blocking oscillator Q609 through the limiter composed of D613 and D614 controlling the frequency of oscillator.
The output pulse of the blocking oscillator is taken from terminal 5 (GRN) of the transformer and triggers the flip-flop Q619 and Q620. The output of the flip-flop is a square wave equivalent to half the blocking oscillator frequency and is taken from MDT (PIN 2, 3) of the DSC board through the preamplifiers Q618 and Q621 connected to the emitter of Q619 and Q620, respectively.
It drives the MDA (Motor Drive Amplifier) and rotates the servo motor.

Description of operation during playback

The control track pulse recorded on the lower part of the tape is picked up by the control track head and the resulting signal is compared to the rotating speed of the disc.
An error signal is generated and the speed of the disc motor controlled by this.
The control track signal is amplified by Q611 and the positive going portion turns on the switching transistor of the next stage Q612, thereby deriving negative pulse from its collector. The leading edge of this pulse triggers the delay multivibrator Q613 and Q614. The pulse width of the delay multivibrator is controlled by the TRACKING control VR101.
The output pulse of Q614 is taken from the collector and its trailing edge triggers the following multivibrator.
The pulse width of this stage is controlled by a variable resistor which operates with VR101.

With this control (TRACKING control), the track recorded by head A can be played back by head A or head B. (The reverse is the case with the track recorded by the head B). The rest of the operation is the same as during recording. So refer to the section on operation during recording.

Description of SLOW playback (apply to SV-700US, ES)

The control pulse is cut off by the switch (SW005) when the SLOW pushbutton is pressed. Thus the rotation of the servo motor becomes free from the servo control. (The blocking oscillator oscillates in free-mode.)
In the SLOW mode, the function of the mechanical tape end switch (SW003 actuated by the tension arm) is suspended, and the function of the electrical tape end switch (Q005, PL002 and TES printed board) becomes effective.
This is to prevent miss operation of the mechanical switch due to momentary change of the tape back tension when the SLOW pushbutton is pressed.
When the end of the tape passes through the photo transistor (Q901), Q901 conducts by receiving the light from the lamp (PL002). Q902 is cut off when Q901 conducts. Therefore, the voltage at the collector of Q902 rises close to 0V, and the relay (K201) is released to cut off the power of the capstan motor.
VR901 on the TES board is so adjusted that the base bias voltage of Q901 becomes approximately 2.0V when the light is cut off.

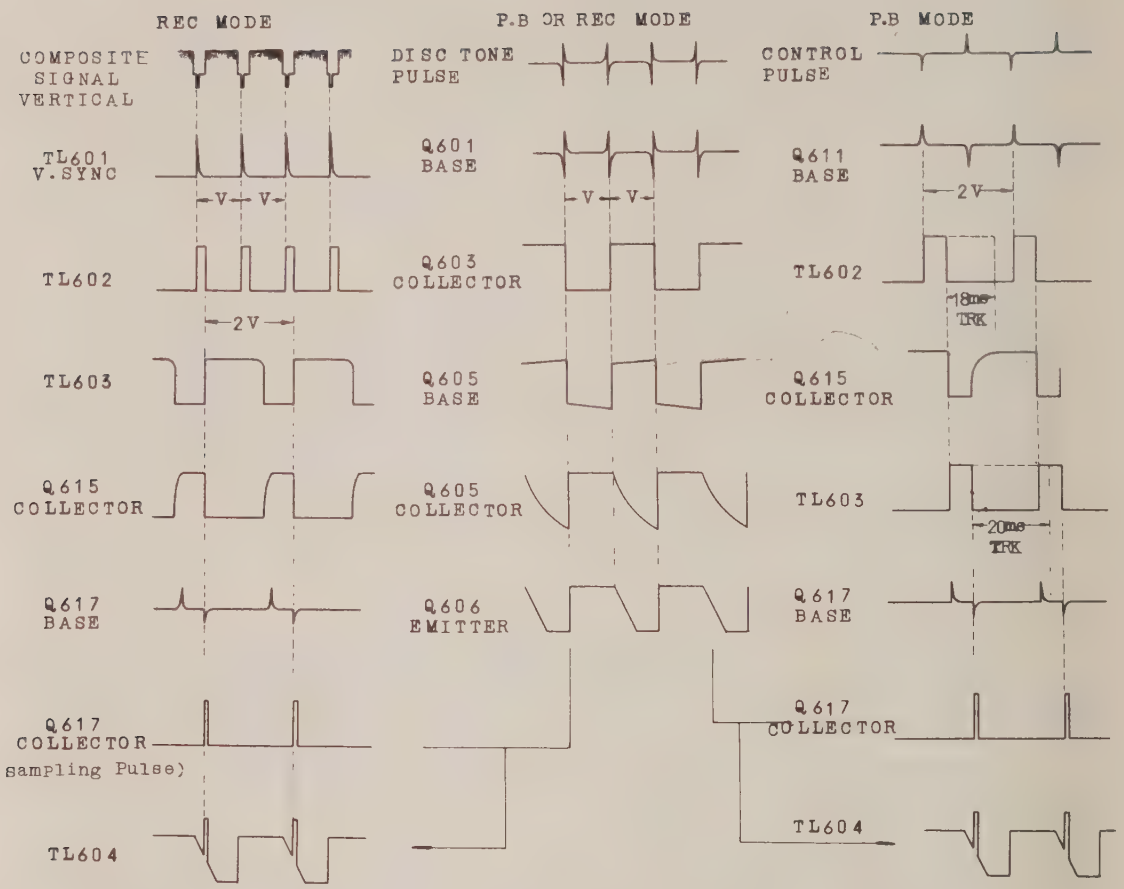


Fig. 2-2 Disc servo waveform phase relationships

3. Audio Circuit (AUDIO)

Audio recording and playback are the same as in the case of tape recorder. The bias and erase frequency is approx. 50kHz. There are 3 inputs: microphone, line and TV audio, but two inputs cannot be used at the same time. In other words, if the microphone plug is inserted into the microphone input jack, the TV and line input are disconnected and priority is given to the microphone.

The switchover between the line input and TV input is accomplished by SW101.

There are 2 outputs, line output and VHF converter output.
The output level is -14dBm (0dBm=0.775Vrms).
The switchover between the recording and playback circuits is accomplished by the relay K701 and diodes D701, 702.
K701 is placed in the break position (the black marked position of the schematic diagram) in the PB or E-E mode and is placed in the make position (the white marked position of the schematic diagram) in the REC or AUDIO ONLY mode.
In the diode switcher, D701 conducts and D702 is cut off in the REC, E-E or AUDIO ONLY mode. D701 is cut off and D702 conducts in the PB mode.
The AGC circuit is effective only at the REC or AUDIO ONLY mode. The variation of the collector level of Q705 is detected by D703 and D704 as the negative voltage.
This voltage is supplied to the base of Q702 to decrease the collector impedance of Q701.
The AGC SET control VR702 is inserted to preset this control voltage so that the gain of the preamplifier Q701 is decreased automatically when the AUD IN level exceeds -10dB.

Preamplifier

The TV audio and line inputs have to be adjusted at the same level to the MIC input for the reason that the audio circuit is designed to meet with the MIC input level (1kHz, -55dBm).
For above reason, the dividing resistors R102 and R103 are inserted. The values of these resistors are selected to standard line input level (-14dBm). In the recording, the gain of the preamplifier is approx. 37dB at 1kHz, and is having nearly flat frequency response.
In the playback, the signal reproduced by the audio head is amplified by Q708 and Q709. The lower frequency is compensated by the negative feedback loop composed of R746, R747 and C729.

The gain in the playback mode is approx. 30dB, and its dynamic range is also approx. 30dB.

Main amplifier

The output from the preamplifier in the REC mode is adjusted by the variable resistor VR102-2 (VR701 in the AGC mode) to have a reserve of the gain for approximately 20dB, and is supplied to the input of the main amplifier.
The gain of the main amplifier is approximately 40dB at a frequency of 1kHz. The output is applied to the audio head together with the bias current. L701 and C733 prevent the bias frequency from leaking into the line output, because they are adjusted to resonate in series with the bias frequency of approximately 50kHz.
In the PB mode, the output of the preamplifier is applied to the input of the main amplifier via the preset resistor VR703. The gain is approximately 40dB as in the REC mode.

Output circuit and others

Both in the REC and PB modes, the output of the main amplifier is derived from the emitter follower Q707, while the collector output of Q705 is used to operate the level meter. The level meter shows OVU when the line output is -14dBm.

Bias and erase circuit

A high frequency signal of approximately 50kHz is generated by Q710 and Q711. The output is taken from the secondary of T701 and is applied through TC701 and C732 to the recording head. At the same time, erase current is supplied to the erase head.
TC701 is a preset capacitor for controlling the bias current.

MECHANICAL SYSTEM (SV-700UC,EC)

1. Major Parts Layout

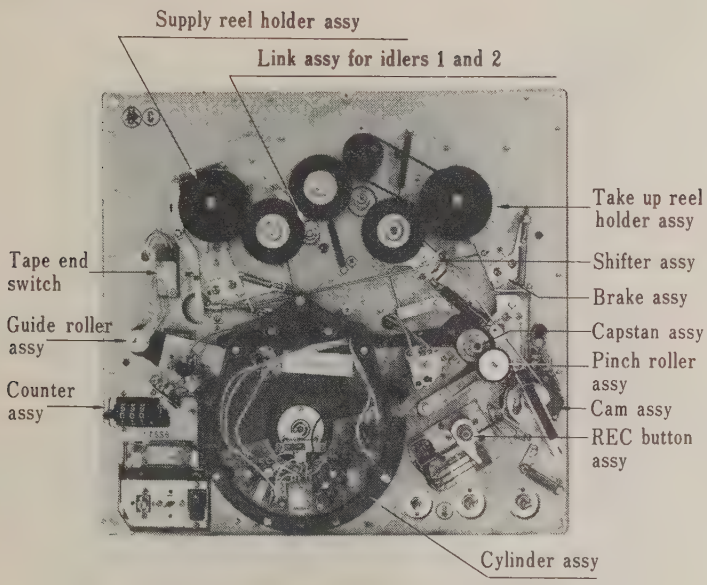


Fig. 3-1 (a)

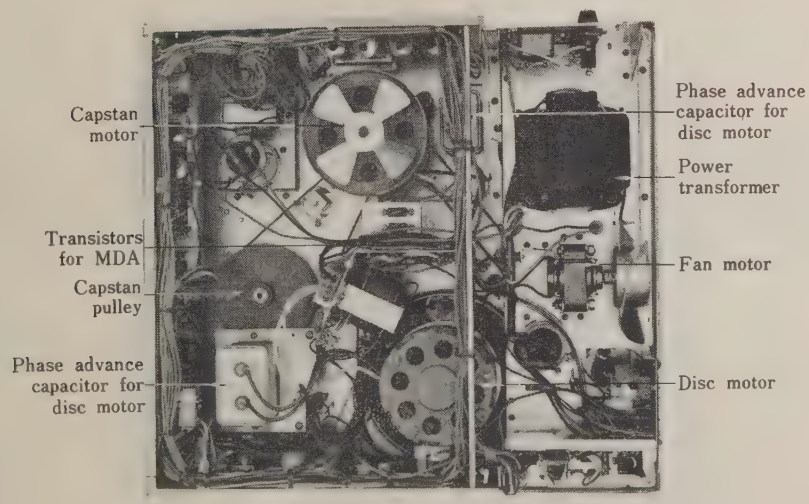


Fig. 3-1 (b)

MECHANICAL SYSTEM (SV-700US,ES)

1. Major Parts Layout

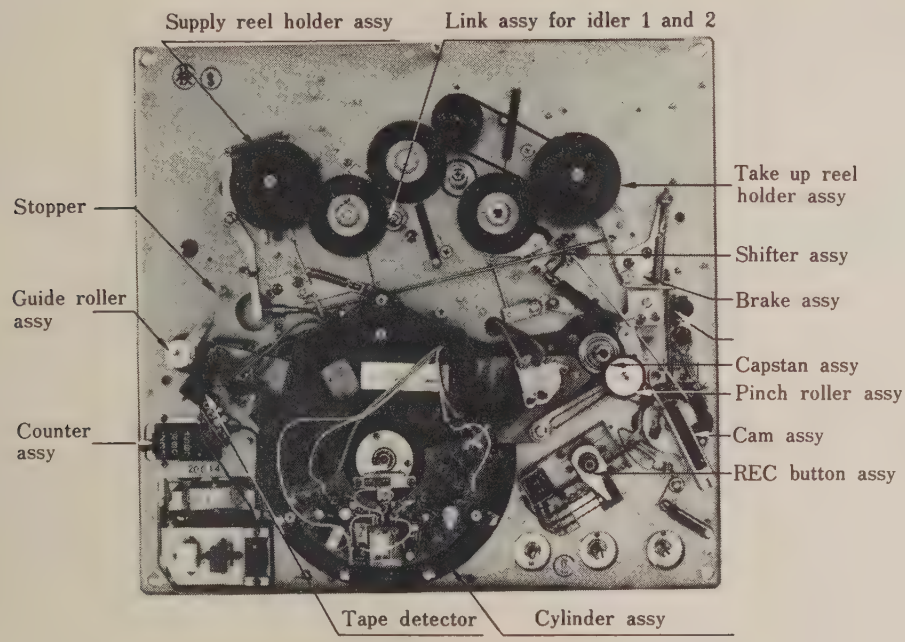


Fig. 3-1 (a)

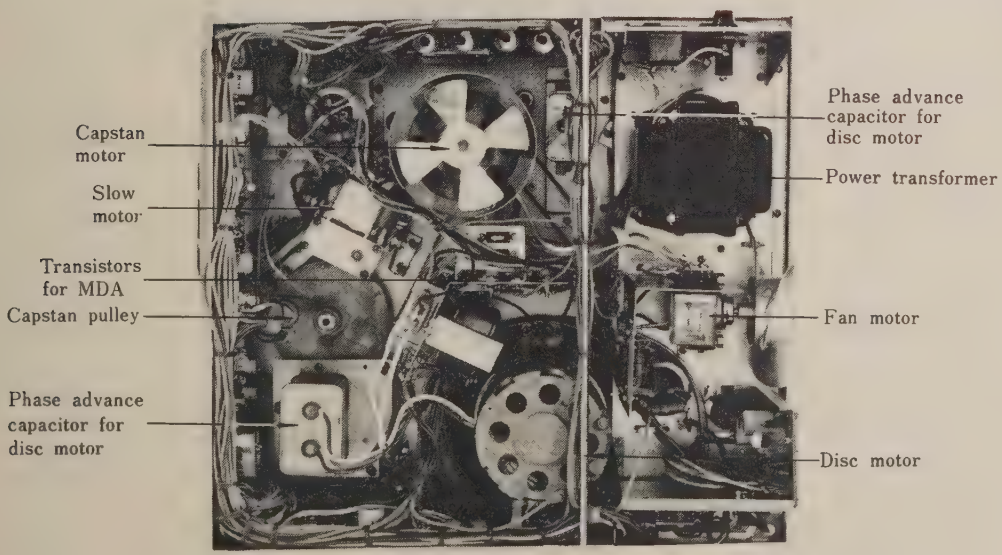


Fig. 3-1 (b)

2. Idler System

STOP and STILL modes (Fig. 3-2)

a. Idlers

Idlers (2) and (3) are separated from the idler pulley.

b. Pinch roller

The pinch roller is not in contact with the capstan.

Note: When the machine is not being used and the control level is left unused for a long time in the PLAY position, the pinch roller will be deformed, which may cause wow. Be sure to set the control lever to the STOP position. In the event the pinch roller being deformed, replace the pinch roller assembly.

c. Brakes

The brakes (1) and (2) are in contact with the supply and takeup reel holders (C).

d. Back tension lever

The back tension lever is away from the supply reel holder (D).

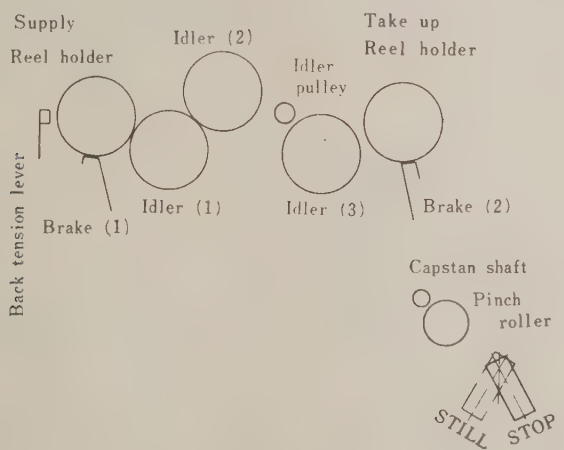


Fig. 3-2

PLAY and REC modes (Fig. 3-3)

a. Idler

The idler (3) is kept in contact with the takeup reel holder (D) and the idler pulley.

b. Pinch roller

The pinch roller is pressed against the capstan shaft (1,000 - 1,5000g).

c. Brakes

The brakes (1) and (2) are held from the supply and takeup reel holders (C).

d. Back tension lever

The back tension lever applies braking to the supply reel holder (D) and stops the rotation of the supply reel holder (D).

Note: If the supply reel holder (D) is allowed to rotate in the PLAY mode, proper back tension (30 - 45g) cannot be obtained.

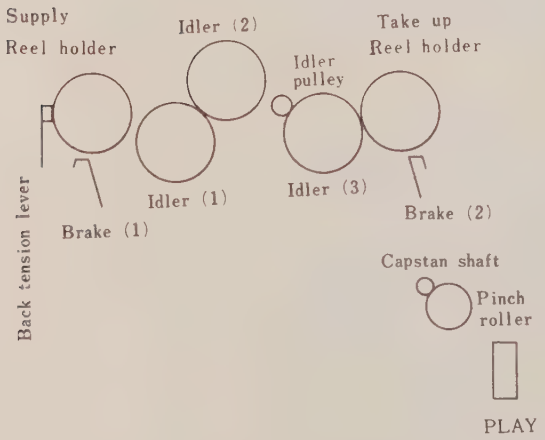


Fig. 3-3

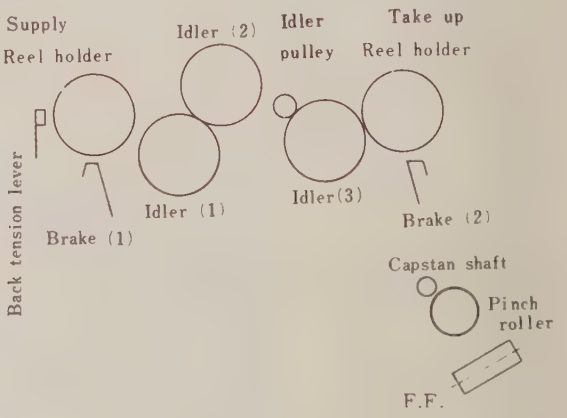


Fig. 3-4

F. F. mode (Fig. 3-4)

a. Idler

The idler (3) rises and stays in contact with the takeup reel holder (C) and the idler pulley.

b. Pinch roller

The pinch roller is held from the capstan.

c. Brakes

The brakes (1) and (2) are held from the supply and takeup reel holders (C).

d. Back tensions lever

The back tension lever is held away from the supply reel holder (D).

REW mode (Fig. 3-5)

a. Idlers

The idlers (1) and (2) keep in contact with the supply reel holder (C) and the idler pulley.

b. Pinch roller

The pinch roller is not in contact with the capstan.

c. Brakes

The brakes (1) and (2) are held from the supply and takeup reel holder (C).

d. Back tension lever

The back tension lever is away from the supply reel holder (D).

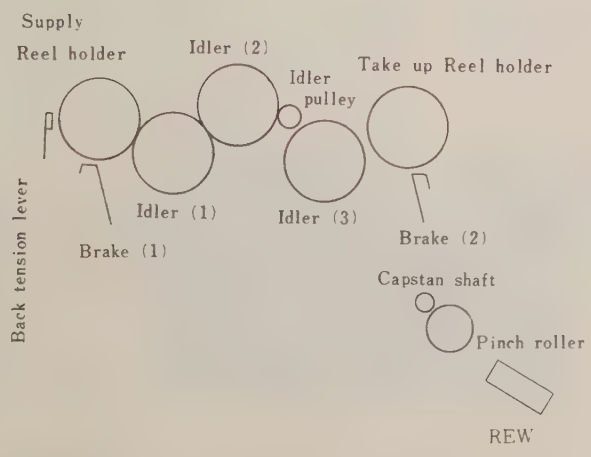


Fig. 3-5

3. Explanation of Tape Transport

Blocked audio head type...(All the audio erase, audio recording/playback head and control head are assembled together.)

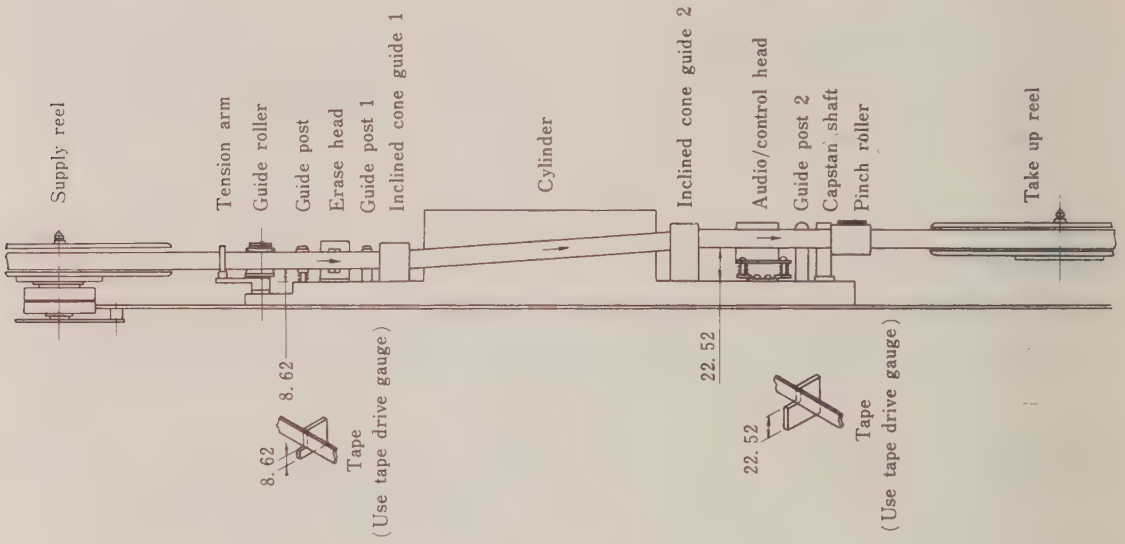


Fig. 3-6

Separated audio head type...(The control head is separated from the audio head assembly.)

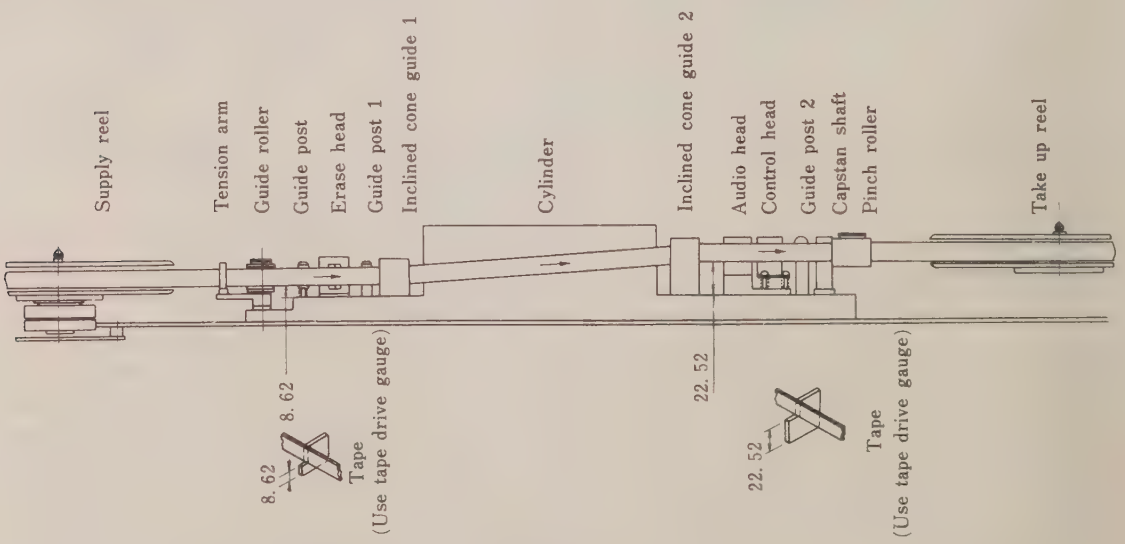


Fig. 3-7

4. Explanation of SV-700US(ES)

The SV-700US(ES) is equipped with SLOW motion playback capability in addition to a standard SV-700UC(EC).

1) SLOW ratio

The rotation of the capstan ... 360rpm in normal operation. 45rpm (36rpm in areas of 50Hz power line frequency) in SLOW playback.

SLOW ratio ..... 1/8 in areas of 60Hz power line frequency.

1/10 in areas of 50Hz power line frequency.

2) In case the tape-pass in the SLOW mode is faulty .....

a. The tape sticks onto the cylinder surface due to the tape passing route gets soiled or humid environment.
b. The power voltage is considerably low.
c. The idler (A) for SLOW motion is worn out.
d. The SLOW motor (MS-2) is faulty.

3) Replacement of the idler (A) and the SLOW motor.

a. Remove the cabinet.
b. Take off the printed board Ⓑ by removing the screws Ⓐ (4 pcs.).

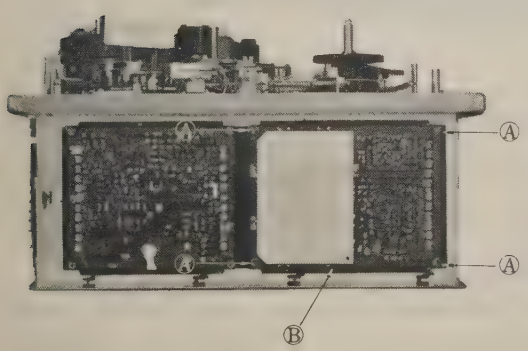


Fig. 3-8

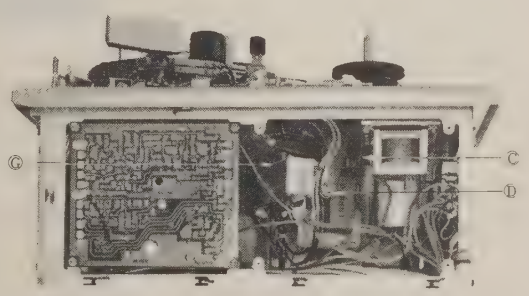


Fig. 3-9

c. Remove the spring (2) Ⓒ from the SLOW motor.

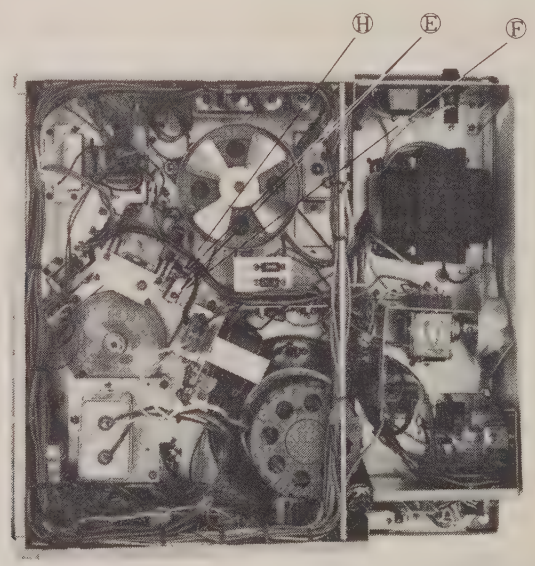
d. Detach the lead wires of the SLOW motor from the soldered points. (This is required only when the motor is replaced.)

e. Remove the E-type ring Ⓓ.

f. The SLOW motor with the motor supports Ⓕ at the both sides the motor can be taken out by removing the four screws Ⓔ. Loosen the screw Ⓖ and replaced the idler (A) with new one.

g. Assemble the motor supports to the new motor by taking them off from the defective motor by removing the E-type rings Ⓗ.

Fig. 3-10



4) Adjustment of the idler (A) and the SLOW motor.

Follow the procedure described in the item 3) conversely to the item 3)-c to mount the new motor. Then perform the fine positioning described hereafter.

Adjust the motor so that the space between the motor and the cam roller (1) is maintained at 0.5 - 1.0mm ... When the SLOW switch is pressed.

Adjust the idler (A) so that the space between the idler (A) and the capstan pulley is maintained at 1.0 - 1.5mm. Both adjustments are physically done by adjusting the motor supports at the both sides the motor.
Make sure the motor rotates smoothly after the above adjustments.

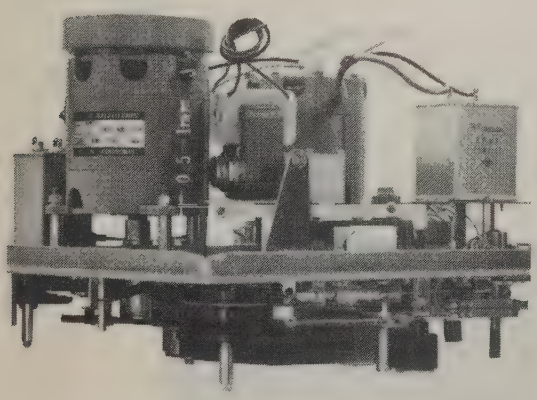


Fig. 3-11

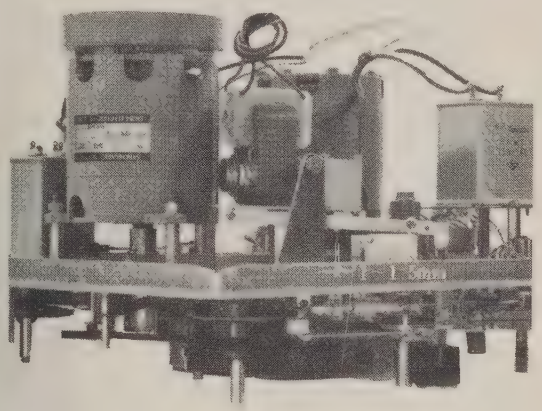


Fig. 3-12

SERVICING AND ADJUSTMENT INSTRUCTION

1. Mechanical

1) How to Remove Cabinet

a. Removal of decoration cover (Fig. 4-1)

(1) Remove ①.

(2) Pull out ②, ③, ④, ⑤ and ⑥.

(3) Remove ⑦ and ⑧ (six places), and the decoration cover can be removed.

Note: Do not loosen the two screws Ⓐ.

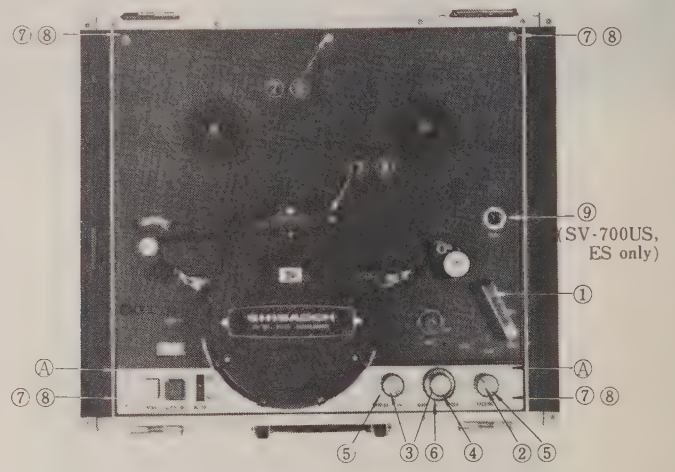


Fig. 4-1

b. How to remove tape deck from cabinet

(1) Take out ① (three pcs.) and ② (one pc.). (Fig. 4-2)

(2) Fit the tape deck lifter T-screws into Ⓑ (two places), and take the tape deck out from the cabinet (Fig. 4-3 on page 34).

(3) Fix the tape deck on a test stand. If the test stand is not available, it may be placed anywhere horizontally.

Note: Remember that a damper spring such as shown in Fig. 4-5 is located in the place Ⓐ in Fig. 4-2.

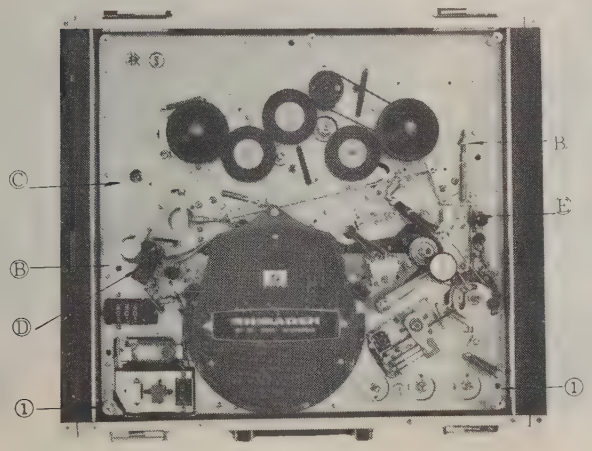


Fig. 4-2

No.	Stock No.	Item	Qty.
1	061026	Operation lever	1
2	097005	Knob 1 assy.	1
3	097006	Knob 2 assy.	2
4	097007	Knob 3 assy.	1
5	061023	Holder, knob 1	2
6	061024	Holder, knob 2	1
7	061027	Washer, plain	6
8	600294	Screw, binding head 3×8	6
9	741006	Slow switch (SV-700US, ES only)	

No.	Stock No.	Item	Qty.
1	051016	Support, top plate B-1	3
2	051017	Support, top plate B-2	1
3	051020	Supring, damper	1

Note: Ⓒ Tape detector (Used in UC and EC types only)
Ⓓ Tape detector (Used in US and ES types only)
Ⓔ Slow switch (Used in US and ES types only)

Fig. 4-3

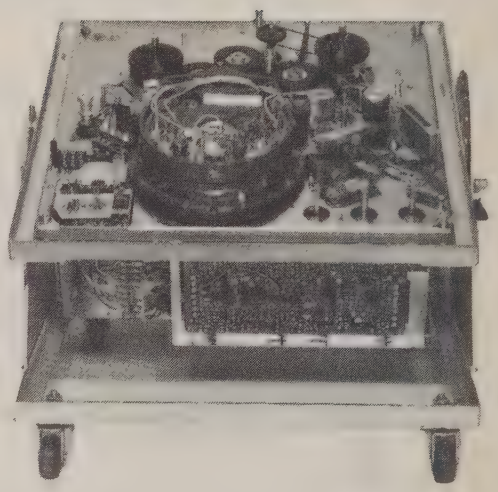


Fig. 4-4

2) Adjustment of Reel Holder Assembly

a. Adjustment of Height

While running tape, adjust the space between the lower flange of the reel and the bottom of the tape to less than 1mm using 6.3ϕ adjusting washers of proper thickness (0.1, 0.2, 0.3 and 0.5).

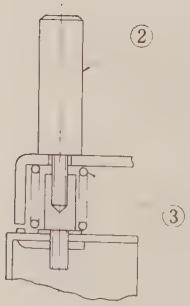


Fig. 4-5

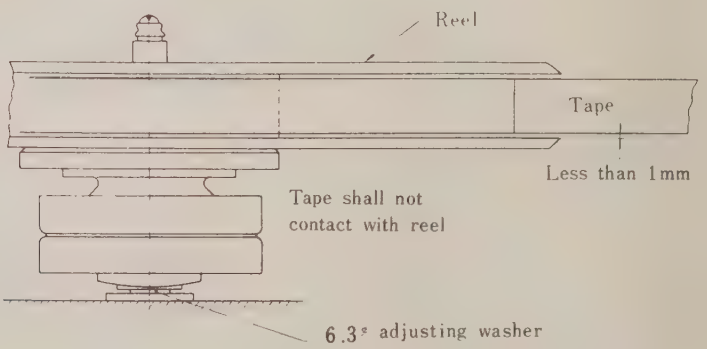


Fig. 4-6

b. Check of reel holder (1) assembly (A)

In the REW mode, reel holder (C) is made to rotate. If, however, the reel holder (A) fails to rotate or is very slow gathering speed, it is probable that the reel holder (1) assembly (A) is faulty or that there is a fault in the tape drive system.

If there is nothing wrong with the tape drive system, it is likely that the reel holder (1) assembly (A) is faulty. Confirm this by making the following measurements.

Using the method as shown in Fig. 4-7, the torque driver reading should be 2,400 to 4,000g-cm.

Fig. 4-7

c. Check of back tension in the PLAY mode

In the PLAY mode, the back tension is designed to be 30 to 45g. If the figure differs from the above because of wear, proceed as below.

(1) Wipe the back surface of the reel holder (C) with clean cloth or replace the reel holder (1) assembly (A).

(2) If the back tension is still abnormal, replace the reel holder (2) assembly (A).

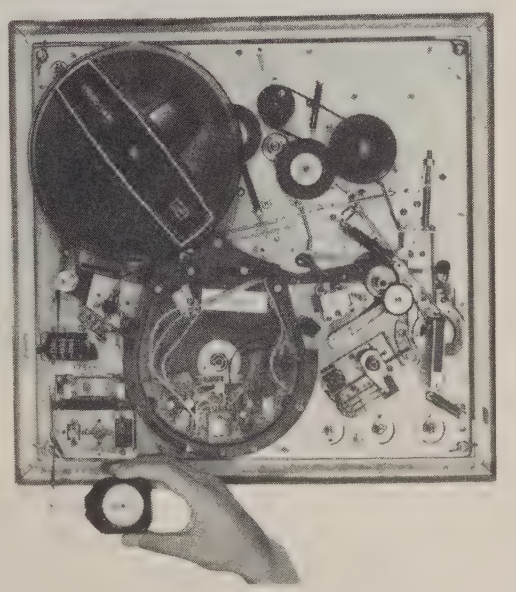
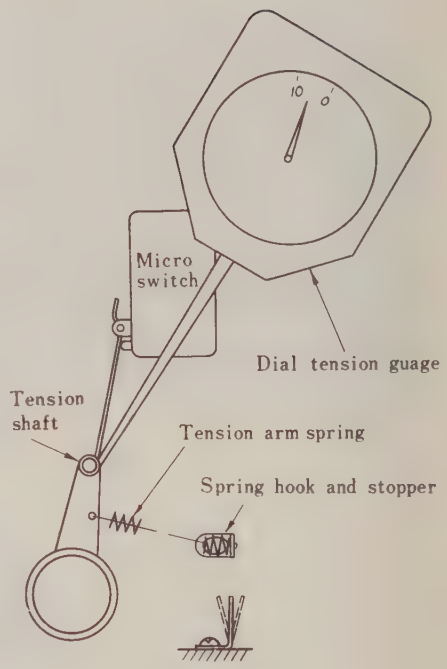


Fig. 4-8

3) Adjustment of Tension Arm Spring (Fig. 4-9)

Press the center of the tension shaft by the dial tension gauge and adjust the strength of the spring by bending the spring hook and stopper so that the tension gauge which reads 8 to 15g when the microswitch is released.

Fig. 4-9



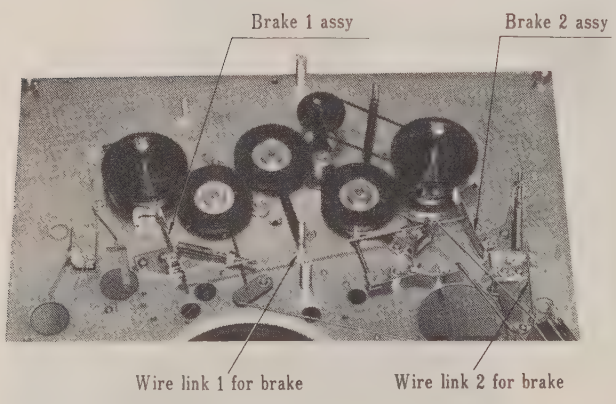


Fig. 4-10

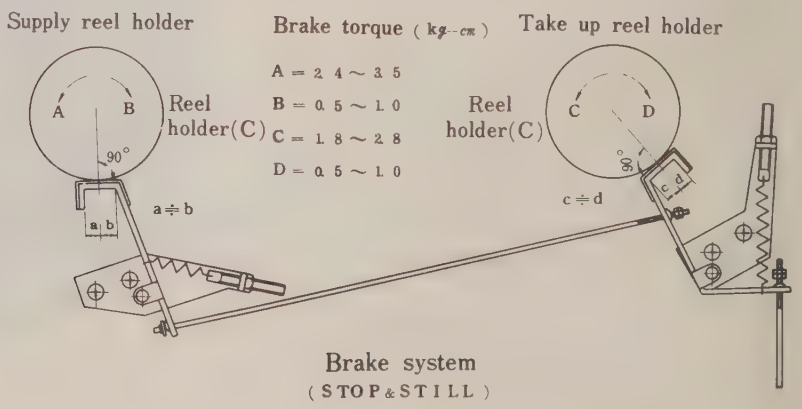


Fig. 4-11

4) Adjustment of Brakes

The positions of the brakes to the supply and take up reel holder (C) are adjusted by shifting little by little their mounting brackets.

a. When the brakes are in action (STOP or STILL mode)

(1) Adjust the brake mounting brackets so that the center of the acting surface of each brake is pressed against the reel holder (C) in right angle as shown in Fig. 4-11 (a≒b, c≒d).

(2) Obtain the brake torque as shown in Fig. 4-11 for A-D directions by adjusting the spring tension adjusting bolts and nuts.

Use a torque driver for the directions A and D, and a dial torque driver for the directions B and C, as shown in Fig. 4-12 and 4-13.

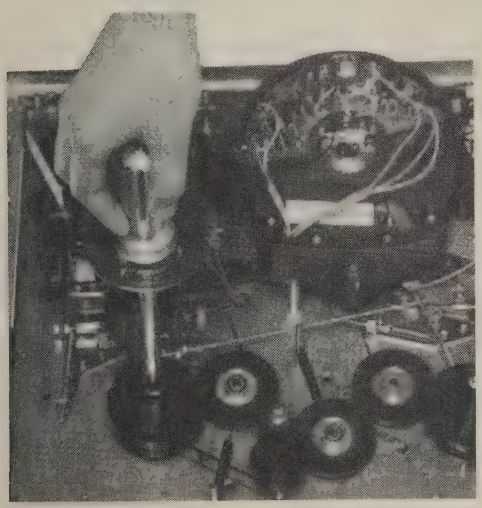


Fig. 4-12

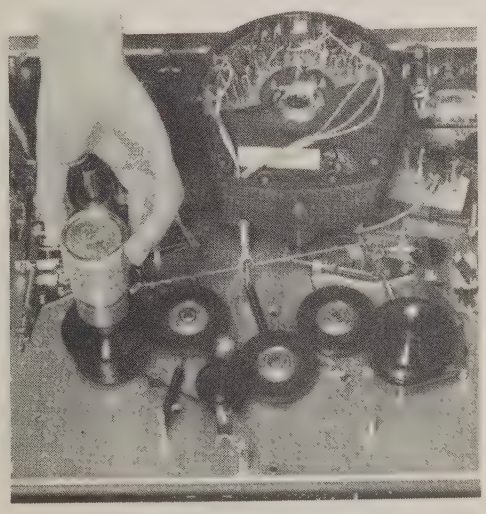


Fig. 4-13

Note: Clean the surface of the reel holder (C) by a cloth with little amount of the solvent naphtha, ethyl alcohol or benzine before the brake adjustment.

b. When the brakes are in released positions (PLAY mode)

(1) Take up side

Adjust the M2 nut of the wire link (2) so that the spacing of 0.8 - 1.0mm between the brake and the take up reel holder (C) can be obtained.

(2) Adjust the M2 nut of the wire link (1) so that the spacing of 0.3 - 0.5mm between the brake and the supply reel holder (C) can be obtained.

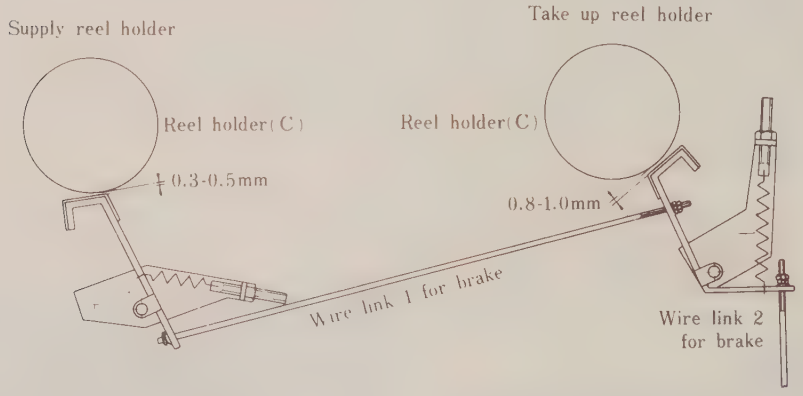


Fig. 4-14 Brake system (PLAY)

Note: Rotate both reel holder assemblies manually in the above adjustment to assure proper spacing for the reason that the rotation of the reel holder assembly involves some eccentric error.

c. Confirmations after adjustment

(1) Confirmation of the brake timing in actual tape running.

-1. When the tape amount of the supply reel is greater than that of the take up reel, the tape end switch does not work by turning the operation lever from F.F. to STILL. (This means that the tape is not slackened.)

-2. When the tape amount of the supply reel is smaller

than that of the take up reel, the tape end switch does not work by turning the operation lever from REW to STOP. (Also this means that the tape is not slackened.)

(2) Confirmation of the STILL mode.

When the tape amount of the take up reel is greater than that of the supply reel, turn the operation lever from PLAY to STILL. Confirm that the picture holds in good condition, and the partial horizontal noise is kept steady.

(3) In case the above item (1) and (2) are not performed properly, repeat the procedure described in the item a and b.

d. Clearance work

When the above all adjustments are completed, apply screw lock with following parts to lock them.

(1) The fitting screws of the brake (1) assembly and brake (2) assembly. Round head screws 4x8, 4pcs.

(2) Nuts for the brake spring adjustment bolt. 4mm 2pcs.

(3) Nuts for the wire link (1) and (2), of the brakes. 2mmx2 each

Note: Hold the inner nut while turning the outer nut by using a pair of special single head wrenches when tightening them as shown in Fig. 4-15.

(4) Fitting screws of the wire link guide. Round head screws 3x6, 2pcs.

Fig. 4-15

5) Adjustment of Spacing between Pinch Roller and Capstan Shaft in STILL mode

a. Remove the pinch roller spring. (Use a long nose pliers)

b. Set the operation lever to STILL.

c. Adjust the actuator of the pinch roller arm (2) so that the spacing between the pinch roller and the capstan shaft becomes 0.3 - 0.5mm.

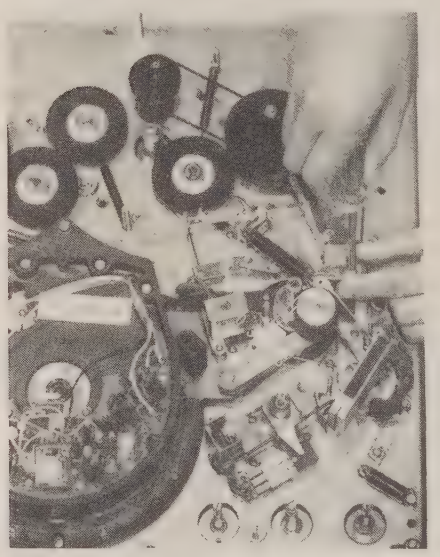


Fig. 4-16

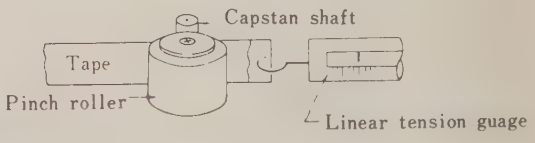


Fig. 4-17

Note: Proper pressure in PLAY mode (The pressure of the pinch roller against the capstan shaft) which is 1,000 - 1,5000g can not be obtained if the spacing of those is too large.
Insert the tape between the pinch roller and the capstan shaft, and turn the operation lever to PLAY. Then measure the pressure by a linear tension gauge as shown in Fig. 4-17. In this time, the power should be turned to off.

6) Adjustment of Shifter Assembly

a. Adjust the mounting position of the shifter bracket so that when the operation lever is placed at F. F., the

idler (3) is as shown in Fig. 4-18, and then lightly tighten the mounting screw of the shifter assembly.

b. Adjust the shifter bracket so that when the operation lever is set to STILL, the spacing between the idler and the idler pulley is nearly equal to that between the idler and the reel holder (D).

c. Tighten the shifter bracket and apply the screw lock while making sure the conditions set out in the above items a and b still satisfied.

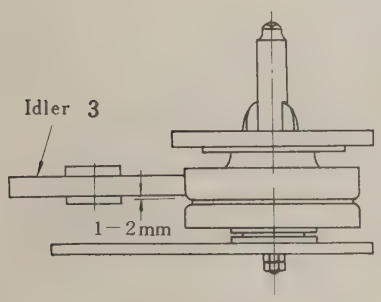


Fig. 4-18

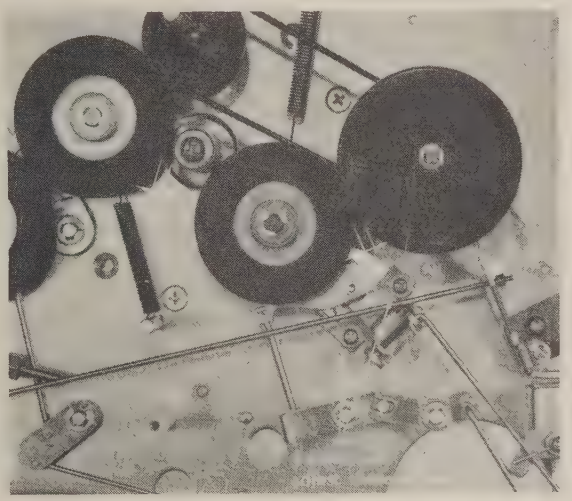


Fig. 4-19

7) Adjustment of Idler Link Assembly

In Fig. 4-20, the position (arrow A) where the wire link (2) is mounted to the link for the idlers (1) and (2), is preadjusted so that the spacing between the reel holder (C) and the idler at PLAY will be approx. 1mm.
When the link for the idlers (1) and (2) is adjusted or replaced, the wire link (2) should be remounted at the original position.

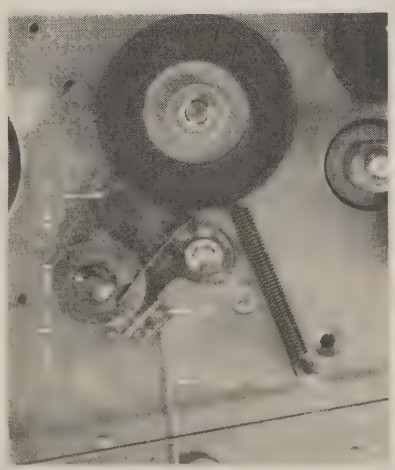


Fig. 4-20

8) Adjustment of Mounting Position of REC Button

Hold the REC button assembly tentatively with mounting screw, set the operation lever to the STOP position, and depress the REC button. Turn the operation lever slowly toward PLAY and fasten the screw of the REC button assembly in a position where the contact of the sheet spring switch is closed when the cam roller reaches the top of the cam (Fig. 4-21).

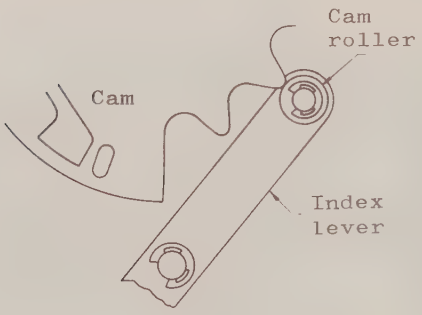


Fig. 4-21

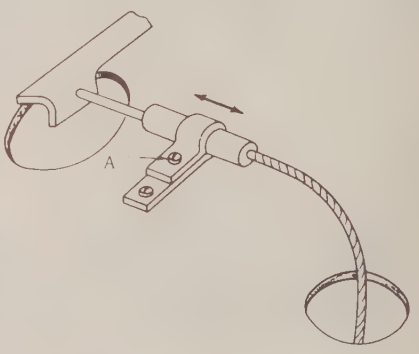


Fig. 4-22

9) AUDIO ONLY Switch Release Adjustment

The AUDIO ONLY switch is locked when depressed with the operation lever at PLAY, STILL or REW, but is not locked at STOP or F. F.; i.e., if the switch is depressed with the operation lever at PLAY and the operation lever is then set to F. F. or STOP, the button is automatically released and the recording is terminated. Adjust as shown in Fig. 4-22. Loosen the screw A, move the release toward the arrow and adjust so that the switch is operated as above.

10) Tape Drive Timing Adjustment

Tape drive timing means the timing of all drive system so as to ensure the smooth passage of tape.

a-1. STOP → PLAY

1. The idler (3) retates.
2. The brakes (1) and (2) are isolated from the reel holder (C).
3. The pinch roller rotates.

-2. PLAY → STOP

1. The pinch roller stops rotating.
2. The brakes (1) and (2) act on the reel holder (C).
3. The idler (3) stops rotating.

b-1. PLAY → STILL*

1. The pinch roller stops rotating.
2. The brakes (1) and (2) act on the reel hoder (C).
3. The idler (3) stops rotating.

Note: The brakes (1) and (2) operate at almost the same time.

-2. STILL → PLAY

No special adjustment required.

c-1. STILL → F.F.

No special adjustment required.

-2. F.F. → STILL*

1. The brakes (1) and (2) act on the reel holder (C).
2. The idler (3) stops rotating.

d-1. STOP → REW

No special adjustment required.

-2. REW → STOP*

1. The brakes (1) and (2) act on the reel holder (C).
2. The idlers (1) and (2) stop rotating.

.....

Note: 1. Pay special heed to the timing of items marked.*
2. The Nos. 1, 2 and 3 denote the timing sequence.

2. Electrical

1) Adjustment of Power Supply (PSY)

Measuring instruments required for adjustment

DC voltmeter (Scale 30V max.)

AC voltmeter (Scale 250V max.)

Adjustment procedure

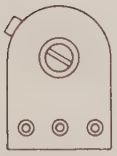
(1) place the VTR in vertical position and remove the bottom cover.

(2) Check that the AC power voltage is at the rated value.

(3) Connect the DC voltmeter between the pin 3 (brown wire) of the VHF CONV output connector (CN 103) of the rear panel and the ground, and adjust the +12V preset resistor on the PSY board so that the meter shows +12V.

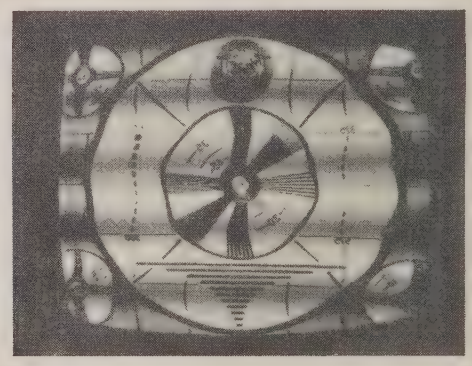
(4) With the power OFF, the approximate resistance values between +12V side and ground between +28V side and ground should be:

+12V - GND .... 50Ω (AGC off)
+28V - GND .... 18Ω (Normal direction)
More than 1kΩ (Inverse direction)



Approximate position of +12V ADJ control

Fig. 4-23



+12V not stabilized

Fig. 4-24

2) Adjustment of Modulator (MOD)

-1. Oscillator frequency adjustment

a. Adjustment by use of deviation checker

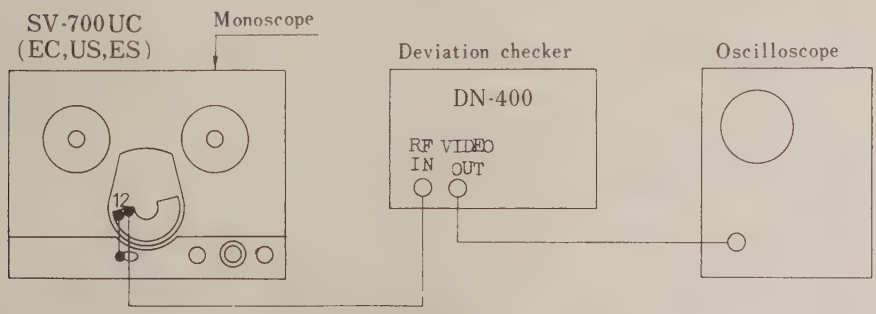


Fig. 4-25

Measuring instruments required for adjustment

Deviation checker (DN-400)

Oscilloscope

Video signal of still picture (E.g. monoscope, step wedge, test pattern)

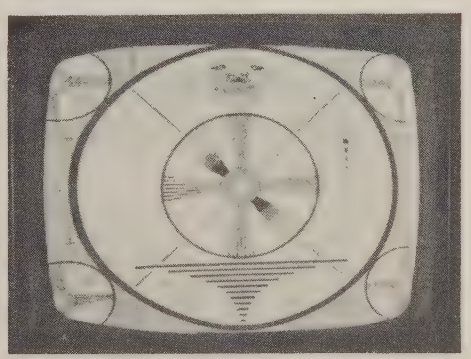


Fig. 4-26

Monoscope signal

Conditions

(1) VTR in the STOP mode.

(2) Supply signal from the camera or generator.

(3) Remove the upper cover of the cylinder and take the signal from the terminals 1 and 2 of the VHA to the RF IN of the deviation checker.

(4) Connect the VIDEO OUT of the deviation checker to the Y-input of the oscilloscope.

Adjustment procedures

(1) Set the XTAL-SG switch of the deviation checker to XTAL.

(2) If the oscilloscope is swept at nearly 60Hz (50Hz), a waveform such as shown in Fig. 4-27 is obtained. Reference levels 3.3MHz and 4.8MHz (4.6MHz) are displayed in line at the intervals of approx. 15.75kHz (15.625kHz), with the video signal in between. Then adjust the video level control of the VTR so that the width of video signal (peak to peak value) becomes nearly equal to that of both the reference lines. (The AGC switch is at OFF position.)

(3) Turn the AGC switch to ON. Adjust the AGC control so that the width of video signal becomes nearly equal to that of both the reference lines. (In this case, the video input level should be nearly 1 Vp-p as the input level control becomes ineffective.)

(4) Adjust the CARRIER control so that the tip of the sync signal will coincide with the 3.3MHz reference line. The CARRIER variable resistor is located near the capstan motor. If the motor is rotating, take great care. If a tape is on the machine, slacken the tape and stop the capstan meter by deoperating the TAPE END switch.

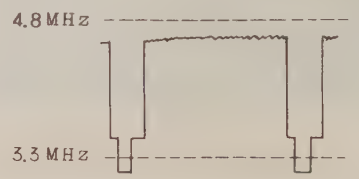


Fig. 4-27

b. Adjustment by use of oscilloscope with calibrated time base

Measuring instruments required for adjustment

Oscilloscope (Band width more than 5MHz)

Video signal of still picture

Conditions

Place the VTR in the STOP mode.

Connect the oscilloscope between the terminals 1 and 2 of the VHA.

Adjustment procedure

(1) Select AC Fast or HF trigger mode and TIME BASE of 0.1μs/cm on the oscilloscope.

(2) Set the video level of the VTR to a point where a satisfactory picture is shown on the monitor (Make sure that the sync tip is clamped.).

(3) Adjust the STABILITY control of the oscilloscope so that the waveform with the longest wave length will come out the clearest. At this point, adjust the CARRIER control so that three waveforms will be displayed in 9cm, and the frequency is approx. 3.3MHz.

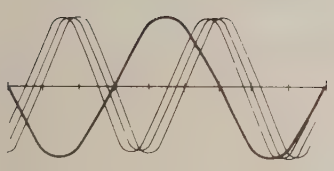


Fig. 4-28

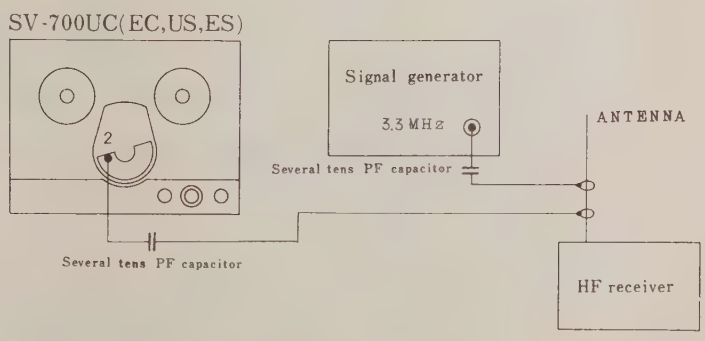


Fig. 4-29

(4) If waveform observation is difficult, reduce the video level to a minimum or cut the video signal off, and make observation without modulation. In this case, a clamping error occurs and the carrier frequency is about 200kHz low. This, however, is not serious.

c. Adjustment by beat with signal generator

Measuring instruments required for adjustment

Signal generator capable of generating 3.3MHz with a frequency accuracy better than 3%; Two capacitors (several tens pF) for coupling to an HF receiver capable of receiving 3.3MHz or 6.6MHz.

Adjustment procedures

(1) Connect a wire from the terminal 2 of the VHA board through the capacitor to the antenna of the HF receiver.

(2) Connect the output of the signal generator through the capacitor to the antenna, too. The receiver should be tuned to 3.3MHz or 6.6MHz.

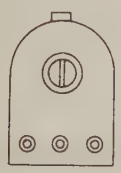
(3) Set the signal generator to 3.3MHz, and make sure that the received signal is actually from the signal generator.

(4) Adjust the CARRIER preset control so that a beat note can be heard from the receiver, and reduce the beat note to zero. (This method also introduces a clamping error lower than the actual value by 200kHz.)

Note: Using this method, it is possible to beat the wrong signal, so make a positive identification of both by a change of frequency or turning off the power. Select the value of coupling capacitor to give the best beat.

d. If there are no measuring instruments at hand

The adjustment should be made by observing the picture of the monitor, though high accuracy cannot be expected with this method. If the frequency is reduced by rotating the CARRIER control of the MOD board, a beat is revealed on the monitor. Set the CARRIER control to a point just before this beat makes its appearance. If beat is contained in the picture, reduce the contrast of the monitor and increase the intensity so that the beat in the darkest portion of the picture can be reduced to a minimum. To give you a rough idea, the position of the CARRIER control will be near the center (Fig. 4-30).



Approximate position of the CARRIER control

Fig. 4-30

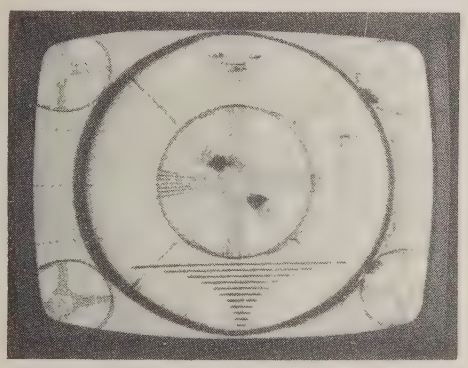


Fig. 4-31

Note: Effects on picture

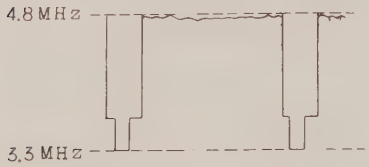
If the frequency is too low ... Beat disturbance is caused.

If the frequency is too high .. White portion skips black when played back (Fig. 4-31).

-2. Calibration of level meter (Video)

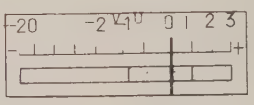
a. Calibration by use of deviation checker

Following the same procedure as in Item 2)-1, adjust the video level so that the video level reaches 4.8MHz (4.6MHz) from 3.3MHz and then set the METER control of the MOD board to a point where the level meter indicates OVU.



Oscilloscope waveform

Fig. 4-32



Level meter adjusting position

Fig. 4-33

b. Calibration by use of oscilloscope

Measuring instruments required for adjustment

Oscilloscope

Video signal of still picture

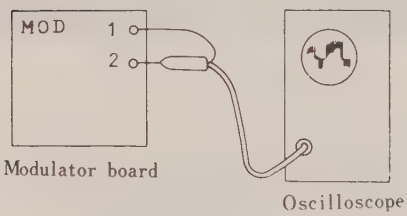


Fig. 4-34

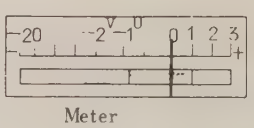
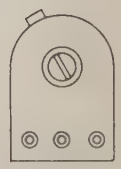


Fig. 4-35



Approximate position of METER control

Fig. 4-36

Adjustment procedure

(1) Assuming that the modulation sensisibity of the MOD board is almost constant, set it according to the input voltage of the MOD video signal.

(2) Observe the waveform of the VIDEO IN terminal of the MOD board by the oscilloscope.

(3) Adjust the video level or AGC level so that the voltage will become 0.35 to 0.5 Vp-p.

(4) At this point, adjust the METER control so that the level meter will indicate OVU. This method gives rise to errors due to the dispersion of the modulation sensitivity.
After the adjustment of the meter, therefore, the result should be checked by recording and reproducing picture.

Note: Effects on picture

If the meter sensitivity is too high	S/N ratio on replay is bad.
If the meter sensitivity is too low	Black after white tearing occurs.

-3. Adjustment of WHITE CLIP

a. Adjustment by deviation checker

(1) Place the WHITE CLIP control in the least effective position (fully counter-clockwise).

(2) By the same procedure as described in a) of Item 2)-1, adjust the video level so that the peak white becomes 120% of normal modulation level (5.1MHz-EIA, 4.86MHz-CCIR).

(3) If the WHITE CLIP control is rotated clockwise, the top of the waveform on the oscilloscope is cut off as shown in Fig. 4-38. Set the control to a point just before clipping occurs.

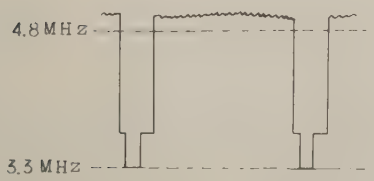


Fig. 4-37

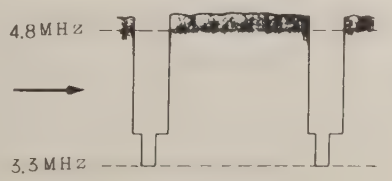


Fig. 4-38

b. Adjustment by level meter and monitor picture (Possible only when the level meter setting has been completed.)

(1) Display a still picture on the monitor, set the video level to +1.5 of the level meter, and rotate the WHITE CLIP control to a point just before white clipping occurs.

Note: Effects on picture

Too much WHITE CLIP ..... Limiting of whites.

Too little WHITE CLIP .... If signal level is too large, the meter shows a large deviation and black after white tearing occurs on playback.

3) Adjustment of Demodulator (DEM)

-1. Adjustment of VIDEO LEVEL

This adjustment should be made in the E-E mode after finishing the adjustment of modulator.

Measuring instruments required for adjustment

Oscilloscope

Video signal of still picture

Adjustment procedures

(1) Adjust the video level or AGC level so that the level meter indicates OVU.

(2) Connect a receiver/monitor to the TV connector to terminate the VTR output with 75Ω.

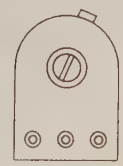
(3) Connect the oscilloscope between the VHF CONV output connector pin 4 and ground of the rear panel and adjust the VIDEO LEVEL preset control so that the video level becomes 1.0 Vp-p (1.4 Vp-p).

Note: Effects on picture

If VIDEO LEVEL is too high ..... Contrast too high and poor S/N ratio.

If the VIDEO LEVEL is too low . Contrast too low.

Fig. 4-39



-2. Adjustment of BALANCE

a. Using step wedge stignal

(1) Apply step wedge waveform to the CAMERA input and set the level to OVU on the meter.

(2) Connect the oscilloscope between the input of LPF on the DEM board and ground. A double waveform as shown in Fig. 4-40 will be seen.

(3) While observing the waveforms, adjust the BALANCE control so that the waveforms merge as nearly as possible.

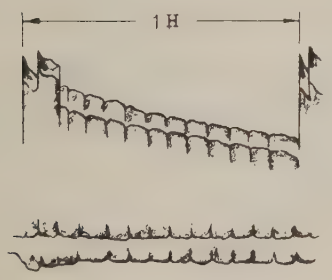


Fig. 4-40

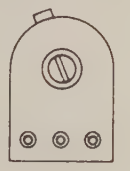


Fig. 4-41

b. Adjustment using multi-burst signal and monitor

Supply multi-burst signal to the camera input, set the level to OVU, and observe the monitor. If the balance is incorrect, a beat will be seen.
Adjust for minimum beat.

Note: Effects on picture

Balance incorrect ..... Beat occurs and picture often displays a poor S/N ratio.

4) Adjustment of Video Head Amplifier (VHA)

-1. Adjustment of REC LEVEL

a. Adjustment by use of oscilloscope and current probe

(1) Close the current probe round the wire linking the terminal REC on the VHA and the relay K501.

(2) Adjust the REC LEVEL control so that the current is 20mAp-p ±5mA. (The optimum recording current differs from head to head but is generally approx. 20mAp-p.)

(3) To determine the optimum value of recording current, record picture with different recording currents such as 10mA, 15mA, 20mA, 25mA and the like, play this back and read the output voltage between the terminals 5 and 6 of VHF, and set the recoring current to a value which gives the maximum output voltage. It is also possible to determine the optimum recording current by finding the best S/N ratio on a replayed picture. When using this method, keep the TRACKING control at a point where the voltage between the terminals 5 and 6 is a maximum.

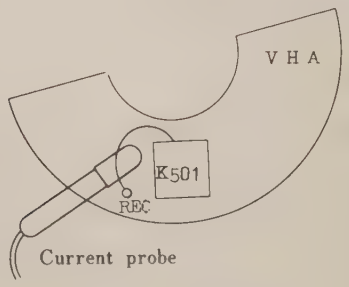
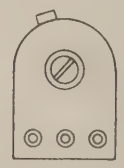


Fig. 4-42



Approximate position of REC LEVEL control

Fig. 4-43

b. If there is no current probe at hand

Measure the voltage between the terminal REC of the VHA and the ground with an oscilloscope, and adjust the REC LEVEL control so that the voltage is about 18 Vp-p. In this case, too, try different voltages, and optimize a maximum voltage from the playback preamplifier output.

Note: Effects on picture

If REC LEVEL is too low .... Poor S/N ratio.

If REC LEVEL is too high ... Black after white tearing shows.

If wear in a video head results in a reproduction (Fig. 4-44) which gives black after white tearing, reduce the record current so that a normal picture is obtained.

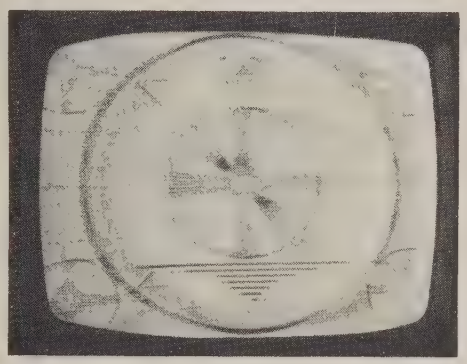


Fig. 4-44

-2. Adjustment of PEAK and DAMP

Signal used for the adjustment should preferably be step wedge but normal TV signal will also do. With the DAMP control on fully counter-clockwise (the least effective damping) position, observe the voltage (RF envelope) between the terminals 5 and 6 of the VHA in the PB mode with an oscilloscope. If the peaking is adjusted in such a way as to increase the capacity gradually from the minimum position, the output voltage begins to increase. Beyond a certain point, the intensity becomes higher in some portions of the waveform than in others,

and the difference grows larger as the control is rotated further. The S/N ratio is gradually improved until tearing on whites occurs.

If the RF envelope develops "whiskers", rotate the DAMP control clockwise until these disappear and the mean amplitude of the RF envelope is a maximum. In the playback picture, the manner of the adjustment is considered as to have best S/N ratio and resolution without black-tearing on white-peaks. In the case of a step wedge, use a timebase setting of about 10μs/cm and adjust for the flattest and largest waveform. Tearing on whites degrades the quality of the picture more than a poor S/N ratio does. To prevent tearing even on tape recorded by another VTR, the capacity of the peaking control should be at the minimum (as for CCW) as possible consistent with a good S/N ratio.

Effects on picture

If the PEAK control is too large ..... (Too low peaking frequency)	Tearing on white occurs.
If the PEAK control is too small ..... (Too high peaking frequency)	S/N ratio is poor.
If the DAMP control is too large ..... (Least effective damping)	Resolution improves but S/N ratio deteriorates.
If the DAMP control is too small ..... (Excessive damping)	Resolution deteriorates but S/N ratio improves.

Fig. 4-45 RF envelope

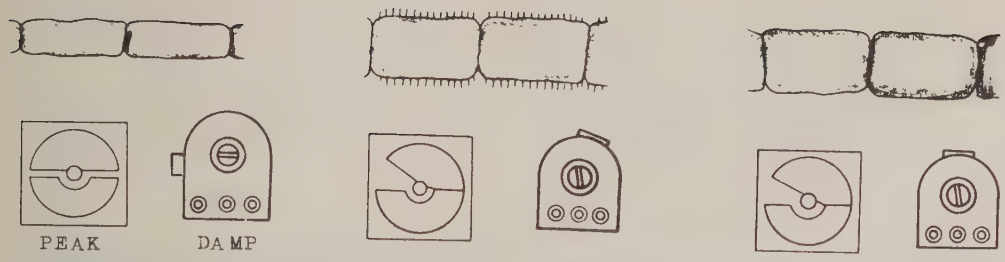


Fig. 4-46 RF envelope amplitude and PEAK and DAMP adjusting positions

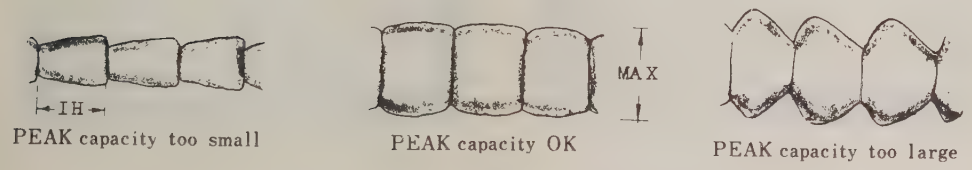


Fig. 4-47 RF envelope of staircase waveform and PEAK adjusting position

Fig. 4-48 Approximate adjusting positions of PEAK and DAMP controls

5) Adjustment of Disc Servo (DSC)

-1. Adjust of FREQ

(1) With the machine at STOP, obtain a picture on a monitor and set the operation lever to REC without threading a tape.

(2) Short TL606 and TL607 on the DSC board together by a link wire. A dark band which is the vertical blanking signal will drift through picture. Adjust the FREQ control so that this band becomes stationary.

(3) Then remove the shorting link wire. If the record timing is correct, the blanking signal will come to rest in the vertical blanking period of the picture.

Note: If the free running frequency of the oscillator is not within approximaterly 6Hz (5Hz) of the nominal 120Hz (100Hz), the servo will not lock and the blanking band will continue to drift through the picture.

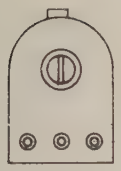
-2. Adjustment of REC TIMING

(1) Initiate the REC mode, adjust the V-HOLD control of the monitor so that the vertical blanking period of the picture can be seen.

(2) Reduce the contrast and increase the brightness of the display so that the vertical blanking period can be seen clearly.

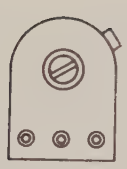
(3) Then adjust the REC TIMING control so that the blanking band locates at the center of the vertical blanking period.

Note: The REC TIMING control affects to the switching position of the picture performed mechanically by the slip rings and brushes. The switching noise appears normally just below the vertical sync. In case the REC TIMING is set at little too high from the proper position, the switching noise disturbs the vertical sync to occur unstable reproduction of the recorded signal. Therefore, make sure the position of the switching noise by recording and playing back the machine after this adjustment.



Approximate position of FREQ control

Fig. 4-49

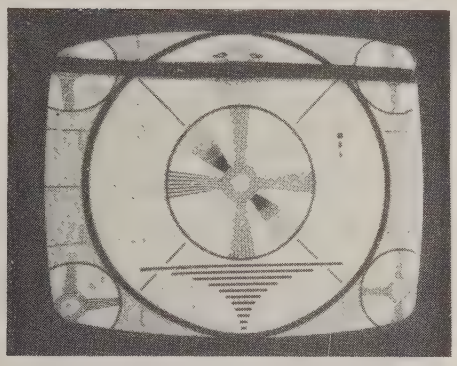


Approximate position of REC TIMING

Fig. 4-50

Lateral band in normal position

Fig. 4-51

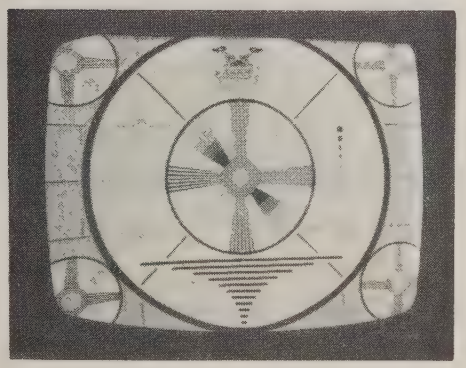


Lateral band enters picture due to inadequate REC TIMING

Fig. 4-52

Fig. 4-53

Lateral band in upper part of picture due to inadequate REC TIMING



6) Adjustment of Audio Circuit (AUD)

-1. Adjustment of AGC LEVEL and AGC SET

(1) Turn the AGC switch to ON, and make sure the AGC lamp is lightened. The machine is at the STOP mode.

(2) Supply the audio signal of 1kHz, -14dBm to the LINE input, and adjust the AGC LEVEL control to read the VU meter at 0VU.

(3) Increase the input level at -10dBm, and adjust the AGC SET control to obtain the output of -14dBm.

-2. Adjustment of BIAS LEVEL

(1) In the REC mode, observe the voltage between the white 2-cond. shielded wire of the audio head and ground, and check that the frequency of the oscillator is 50kHz. Also, adjust the BIAS LEVEL control trimming capacitor so that the voltage is 55 Vp-p. If the oscillator frequency is not 50kHz ±10kHz, adjust it by rotating the core of transformer T701. This is not a critical adjustment.

Note: If the bias is too high, high frequencies will be attenuated and the output will be low. If the bias is too low, reproduction will be distorted.

-3. Adjustment of PB LEVEL

(1) Supply a 1kHz sine wave to the line input, set the record level to OVU, and record the signal for about a minute.

(2) Play back and adjust the PB LEVEL control so that the VU meter shows OVU.

(3) The sensitivity of the LINE input is -14dBm. If the input is too excessive, it overloads the first stage and the meter will not indicate the correct level.

(4) If there is no signal generator available, adjust the PB LEVEL so that the VU meter reads the same on both record and playback.

-4. Adjustment of bias trap

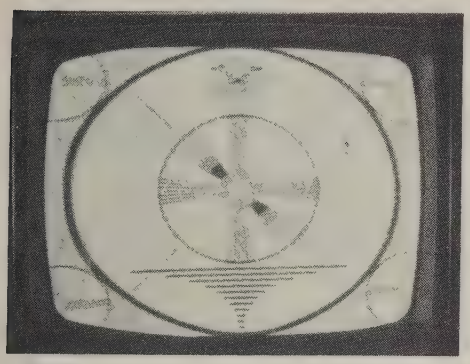
Connect an oscilloscope to pin 5 of the VHF CONV. socket. Set the machine to the REC mode, and adjust L701 for minimum bias leakage of 50kHz.

7) Adjustment of Video Erase Circuit (ERS)

Connect an oscilloscope to both terminals of the erase head and check the frequency. The voltage needed at the erase head for satisfactory erasure is more than 30 Vp-p.
The audio bias oscillator is commonly used as for the video erase oscillator, and the output is taken out from the osc. transformer T701 by means of the separately provided secondary winding.

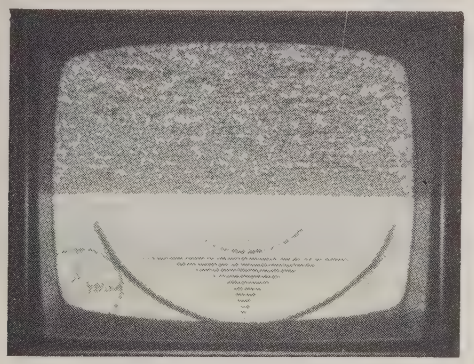
Confirmation after adjustment

Record over the lase part of an existing recording with no signal input, play that part back, and check that there is no trace of the original picture and just the noise appears.



PB picture of tape recorded without fully erasing previous signals

Fig. 4-54



If video signals in upper part of the photo are fully erased, only noise such as shown in upper part of the photo appears on the screen.

Fig. 4-55

8) Adjustment of Tape Detector (SV-700US and SV-700ES only)

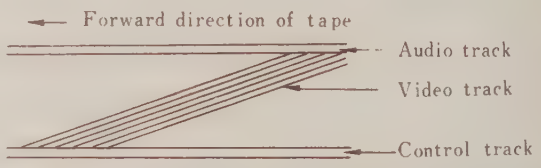
Adjust VR901 located on the TES board to read the voltage of approx. 2.3V at the base of Q901 while Q901 receives the light.

3. Interchangeability Adjustment Procedure

1) Tape Pattern

The tape pattern of the SV-700 series recorder (as observed by developping a video tape) is shown in Fig. 4-56.
To achieve complete interchangeability, it is necessary that the video heads of the playback machine shall follow exactly the same path as the video heads of the machine which made the recording.

Fig. 4-56



2) Adjustment Procedure

The following components are necessary to be adjusted.

* Eccentric washer
* Inclined cone guide (1)
* Inclined cone guide (2)
* Tape guide band
* Brush fittting screws
* Brush mounting bracket
* Brush pressure adjusting screw
* Guide post

Note: Adjustments associated with the brushes are to make the head switching timing in keeping with a standard recoring.

Reference tape

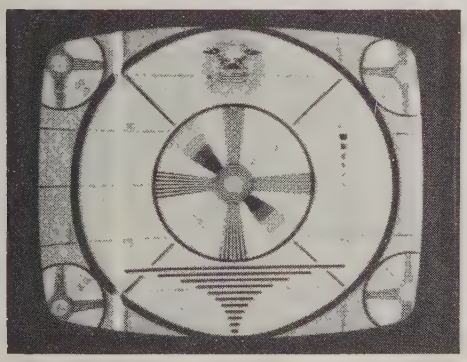
The reference tape is one on which a test signal has been recorded by a reference VTR. The tape path of this machine has been adjusted particulary accurately. The reference tape should be used for interchangeability adjustments and

its characteristics are as below.

* Tape width ..... 12.635 - 12.645mm
* Carrier frequency and deviation ... 3.3 - 4.8MHz (4.6MHz)
* Video signal ..... Consists of a white vertical bar inserted on the left of a monoscope signal. The level of this white signal denotes 120% of the video signal.
* Audio signal ..... 1kHz sine wave

Fig. 4-57

Reproduced picture of the reference tape



Jigs and tools necessary for interchangeability adjustment

* Reference tape and empty reel
* VTR, monitor and interconnecting cable
* Phillips screw driver (medium and small)
* Conventional screw driver (small)
* Interchangeability adjustment wrench
* Cleaning cloth (unbleached muslin)
* Solvent naphtha, ethyl alcohol or benzine

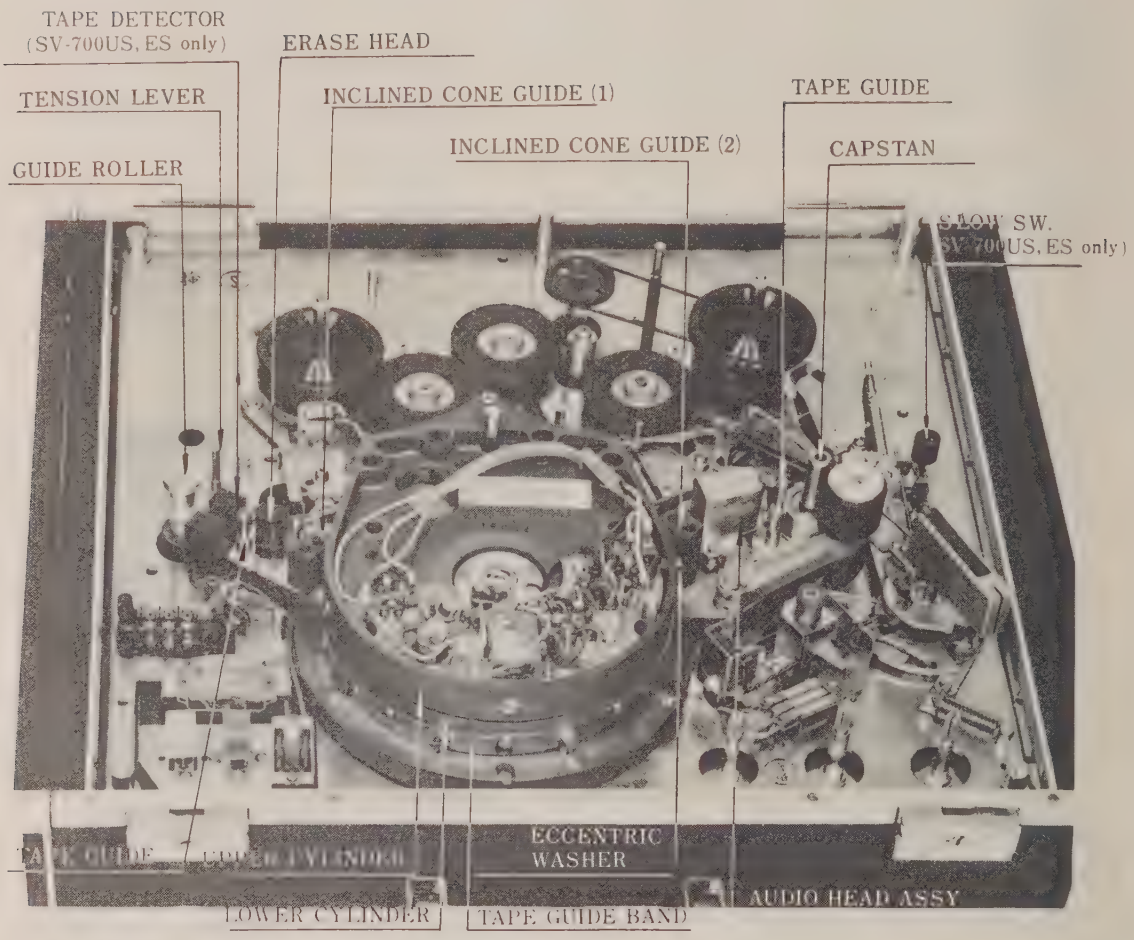

TAPE DETECTOR
(SV-700US, ES only)
ERASE HEAD
TENSION LEVER
INCLINED CONE GUIDE (1)
TAPE GUIDE
GUIDE ROLLER
INCLINED CONE GUIDE (2)
CAPSTAN
SLOW SW.
(SV-700US, ES only)
ECCENTRIC
WASHER
AUDIO HEAD ASSY
LOWER CYLINDER
TAPE GUIDE BAND

Fig. 4-58

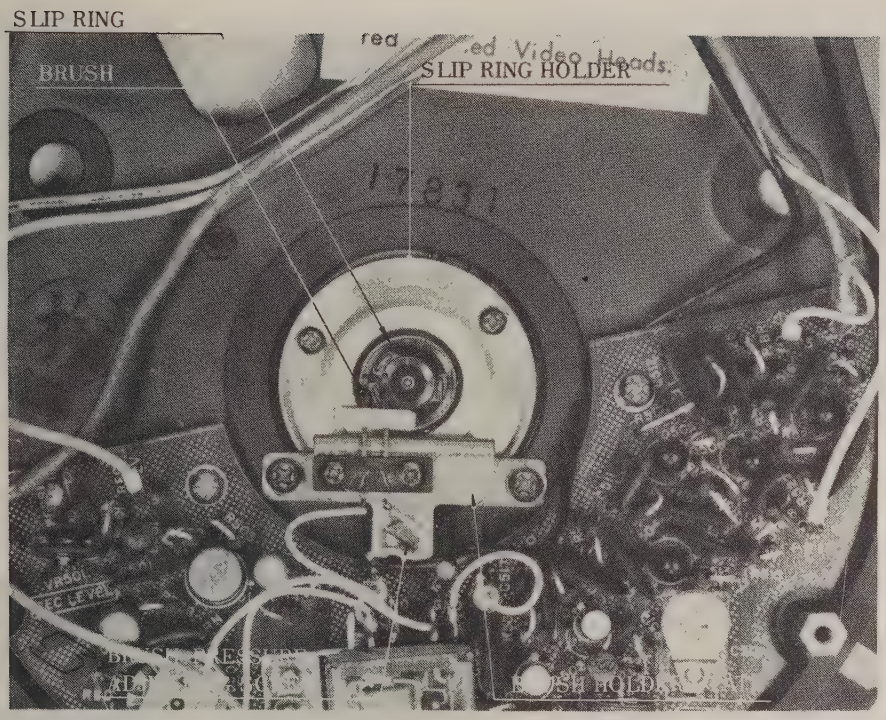


Fig. 4-59

Adjustment

(1) Cleaning of tape transport

If there is any dirt on the tape transport, it is likely to cause improper tape drive. Before adjustment, therefore, clean the tape transport with a cloth moistened with a suitable cleaner.

The following items should be cleaned.

* Tension lever
* Guide roller
* Erase head and tape guide
* Inclined cone guide (1)
* Cylinder and tape guide band
* Inclined cone guide (2)
* Audio head and tape guide
* Capstan
* Pinch roller

The pinch roller should be only wiped with a dry cloth. Do not thread the tape before the cleaning liquid dries.

(2) Preparations

Load the reference tape, and turn the eccentric washers so that the tape does not touch with it (refer to Fig. 4-60 and 4-61). In the PLAY mode, adjust the inclined cone guides (1) and (2) so that the tape does not touch the guides of the erase and audio heads (Fig. 4-62 and 4-63).

The construction of the inclined cone guides (1) and (2) is shown in Fig. 4-64. To adjust their inclination, turn the screws which springs are wound (near side for the guide (1) and the far side for the guide (2)) using the hexagon screwdriver.

If turning the screw with the spring has no effect, loosen a little the one which has no spring.

Note: a. Do not put the machine into the REC mode in any case as the reference tape is used.
Check the following with the tape in motion.

* The reel heights shall be normal.
* The reel edges should not vibrate up and down.
* The tape should not be in contact with the reels.

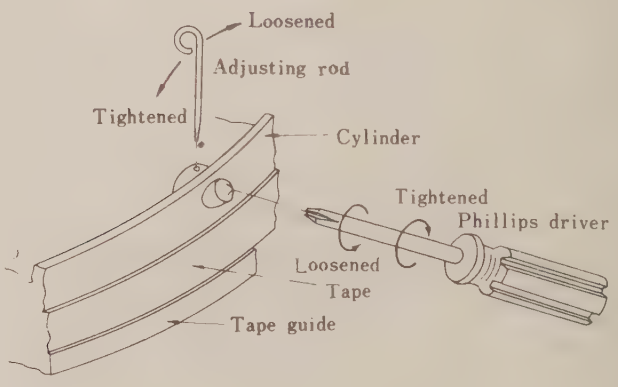


Fig. 4-60

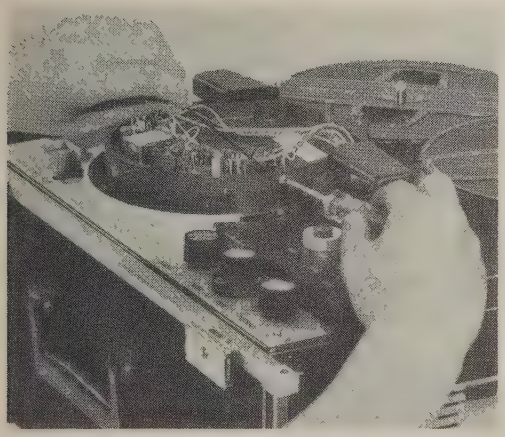


Fig. 4-61

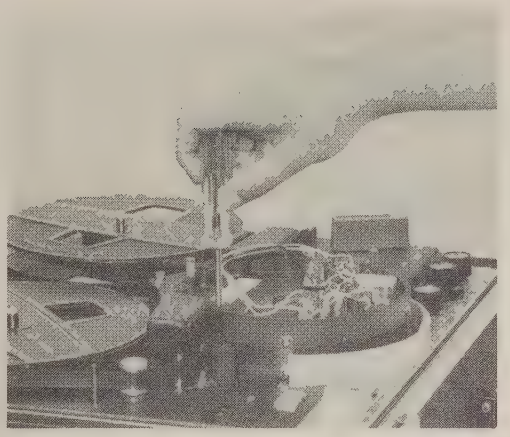


Fig. 4-62

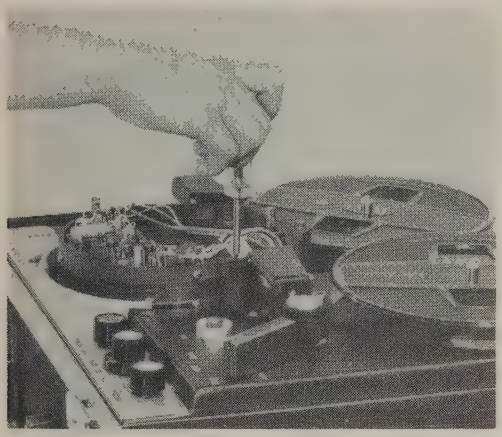


Fig. 4-63

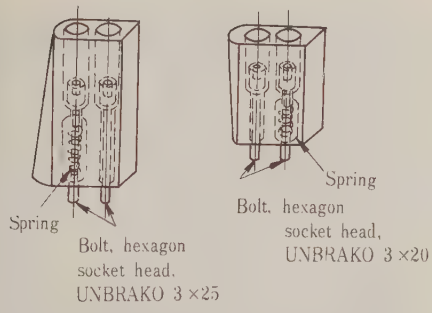


Fig. 4-64

Note: b. Pay heed to the supply reel in particular (Refer to Fig. 4-65).

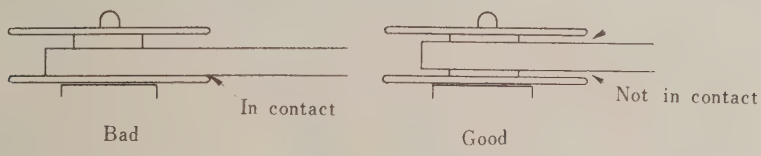


Fig. 4-65

* Tension lever ..... If this moves largely, it is likely that this is the result of the back tension changing. Check the supply reel holder assembly.

* Guide roller ..... Check that it is rotating freely, and that the tape contacts with either top or bottom edge of the roller causing buckling of the tape.

* Cylinder ..... Check that the tape maintains contact only with the extreme left end of the tape guide band, and that it does not touch the other sections. Check that there is no large vertical movement of the tape in the central part of the cylinder, and that the sound of the disc rotating is normal.

* Audio head tape .... Check that the control head, audio head and tape are in the normal positions.
guide Note that if the gap of the control head extends much below the tape, servo failure will result.

* Capstan and pinch .. Check that the capstan and pinch roller are in firm contact with each other.
roller If the tape fails to run smoothly, adjust the pinch roller pressure according to the relevant instructions.

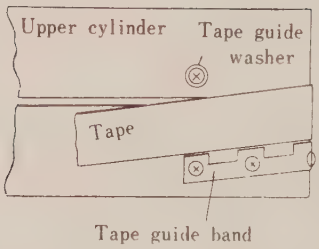


Fig. 4-66

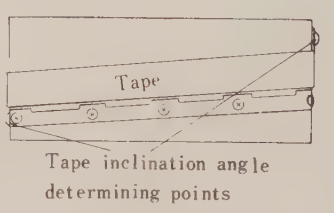
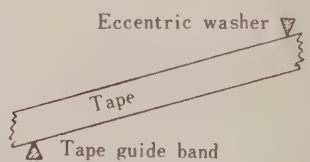


Fig. 4-67



Inclination angle determined at two points

Fig. 4-68

(3) Adjustment

Adjust the inclination of the tape on the cylinder by means of eccentric washer. The position of the tape guide band is preset. It must not be moved.
This position should be checked as shown in Fig. 4-66, 4-67 and 4-68. Check that the contact point of the bottom edge of the upper cylinder and the top edge of the tape is below the left side of the tape guide washer.
If the inclination of the tape is incorrect, the path of the video heads will cover several video tracks.
This will result in several bands of noise in the picture (Fig. 4-70).

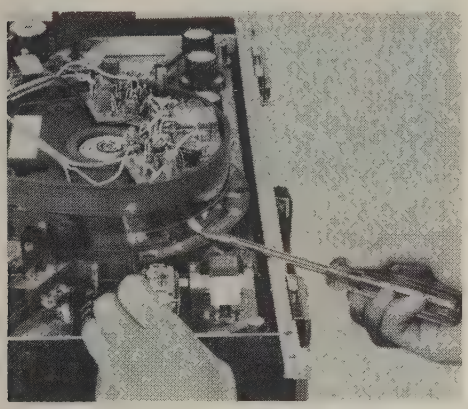


Fig. 4-69,

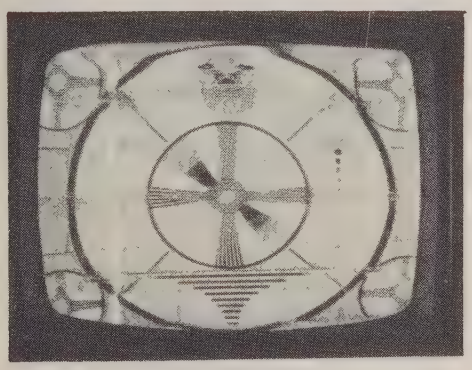
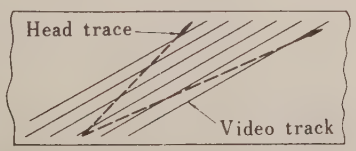


Fig. 4-70

The relationship between the path of the video head and the video tracks are illustrated in Fig. 4-71. At this point, if the eccentric washer (which forces the tape down) is adjusted properly, the noise bands are reduced in number to one. And if the TRACKING control is adjusted, a normal picture with no noise will be obtained. If the tape is forced

Fig. 4-71



down further the number of noise bands will increase again. When a normal picture has been obtained, readjust the TRACKING control so that the noise in the picture is maximum. At this point, the inclined cone guides are yet to be adjusted.

The actual video head path and video tracks are as shown in Fig. 4-75. Next, rotate the TRACKING control clockwise and counter-clockwise of the position which gives maximum noise. Adjust the eccentric washer so that the noise bands come together and disappear in the center of the picture when the control is rotated in one direction, and move towards the top and bottom of the picture when the control is rotated in the opposite direction.

Fig. 4-72

Fig. 4-73

Fig. 4-74

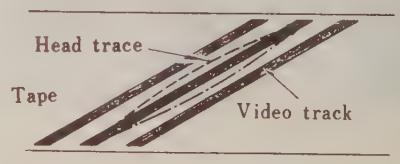


Fig. 4-75

The balance between the top and bottom is important. If the noise bands do not collect in the center, adjustment is not complete. It is necessary to check constantly on the balance by rotating the TRACKING control either side of the position which gives maximum noise. Now, adjust the TRACKING control so that noise is seen either at the center or at both top and bottom of the picture, and adjust the inclined cone guides (1) and (2) for minimum noise.

These should be adjusted alternately a little at a time.

If one is moved too far, it will be difficult to achieve proper adjustment. As the noise is reduced, readjust the TRACKING control so that the former increases a little. Repeat this procedure until noise appears progressively and evenly distributed, as the TRACKING control is rotated from that position which gives maximum noise. In most monitors the tube is overscanned and one cannot see parts which are normally not seen by rotating the V. HOLD control.

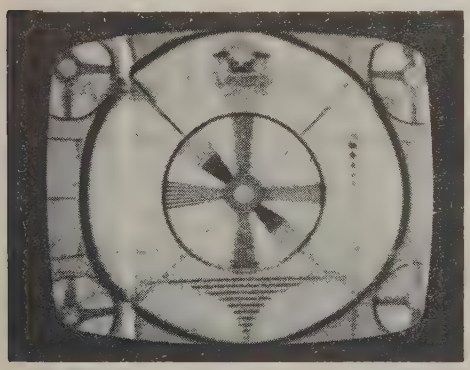


Fig. 4-76, Noise divided upper and lower parts

Fig. 4-77 Noise maximum

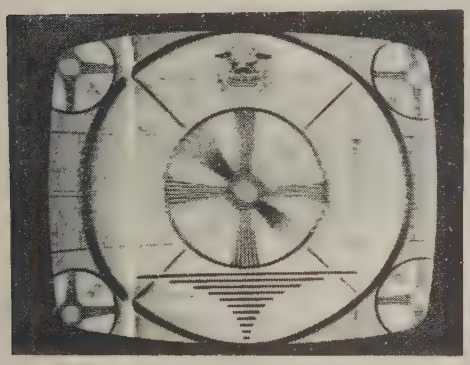
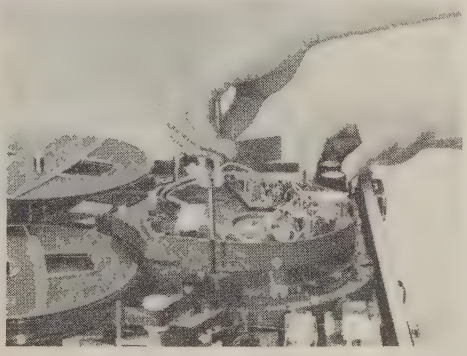


Fig. 4-78 Noise concentrated in center



Adjust inclined cone guides, while rotating TRACKING control

Fig. 4-79

The inclined cone guide (1) affects the lower part of the picture, while the cone guide (2) affects the upper part.

Whilst watching changes in the picture, therefore, the guides (1) and (2) should be adjusted next. Adjust each guide a little at a time. When setting up is complete, noise will increase over the entire picture then decrease and reach a minimum as the TRACKING control is rotated. When the procedure described above has been carried out, check that the eccentric washer and the inclined cone guides are secure. If the screws are not tightened, tighten then carefully, all the time watching the monitor to see that the settings have not been disturbed.

Note: a. The displayed noise pattern when the video heads are tracing between the tracks may vary from time to time because of variations in the tape drive. To check for excessive variations in the noise pattern, it is necessary to watch the monitor for some time. If the noise pattern varies cosiderably when the machine is set up correctly, no simple repair is possible. As the most probable cause of trouble is a faulty cylinder.
Replace the cylinder with a new one.

b. When making adjustment to the tape path, take great care, remember the video heads rotate at high speed.
One slip with a screwdriver can destroy both heads or seriously scratch the cylinder surface.

c. Interchangeability adjustments are very critical. Make adjustments little at a time and every time a component is moved to observe carefully the effect on the picture.

Brush position adjustment

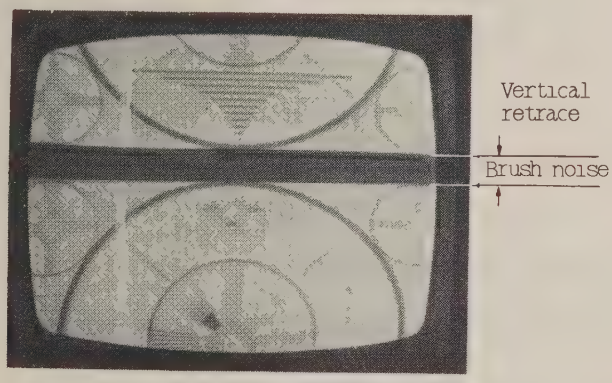
With the above adjustment complete, interchangeability is not yet perfect. Even if the video heads move accurately along the video tracks. If the heads are not switched at the proper time, when playing the tape from another machine, there will be times when no signal comes from the heads. First thread and playback the reference tape, and observe

the vertical sync signal and its vicinity by rotating the V. HOLD control of the monitor, reduce the contrast and increase the brightness so that the switching point can be seen clearly.

Turn the brush adjusting screw on the rear of the brush assembly and move the brushes forward and backward.

When doing this, make sure the brushes are still running in the center of their respective slip rings. Fine adjustment should be made by the brush pressure adjusting screw. This screw, however, is primarily designed for adjustment of brush pressure. For this reason, this screw should be adjusted within a range where no brush noise occurs and where the brush pressure is not too excessive. The period of switching noise should be adjusted to be less than 2H. Refer to Fig. 4-80 for the location of the noise.

Fig. 4-80



Note: The brushes are in groups of three. If all of them are not in contact with the slip ring, the noise period will increase.

After adjustment with the reference tape, thread another tape. Make a short recording and play it back. If the switching period is less than 2H on playback, this may be considered satisfactory. It may be that an additional switching point is seen. If it is, it means that the video is being erased by the audio erase head.

To confirm this, playback the last part of the recording. If the additional switching point disappears just before the end of the recording, the audio head is too low and must be adjusted.

Final check

(1) Tracking width check

If the TRACKING control is rotating in the PB mode, noise will be found in two positions. The no-noise angle between these two positions should be greater than 45 - 60° degrees.

(2) Tape inclination angle check

Rotate the TRACKING control and check that noise appears evenly over the intire picture and dies out uniformly.

(3) Check that the switching noise period is less than 2H.

Note: Make sure that all control screws are held securely in place. However, be careful not to tighten them too much.
After adjustment, apply screw lock tight.

(4) Tape pattern check

Obtain and check the recoring track pattern.

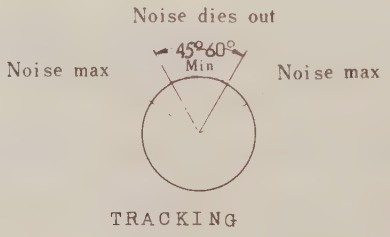


Fig. 4-81

Normal pattern after interchangeability adjustment

Fig. 4-82

Fig. 4-83

Pattern with part of video track erased by edge of audio erase head

4. Video Head Replacement

1) Optical Replacement Procedure

-1. Mounting and adjustment of video head replacement jig

(1) Remove the cylinder cover from the cylinder assembly.
(2) Remove the deck coverplate (Refer to Section on Removal of Cabinet.).
(3) Remove reel holder (1) and (2).
(4) Remove the screws fixing the record button assembly, and mount the jig to the cylinder assembly.
(5) Adjust the illuminators so that the video heads are well illuminated.
(6) Mount the small tester to the jig.
The arm shall be tangential to the circumference of the cylinder. Fix the tester securely after adjusting the touch of the feeler against the outer peripheral surfaces to about 20μ. Then, turn the dial on the tester to obtain a reading of zero.

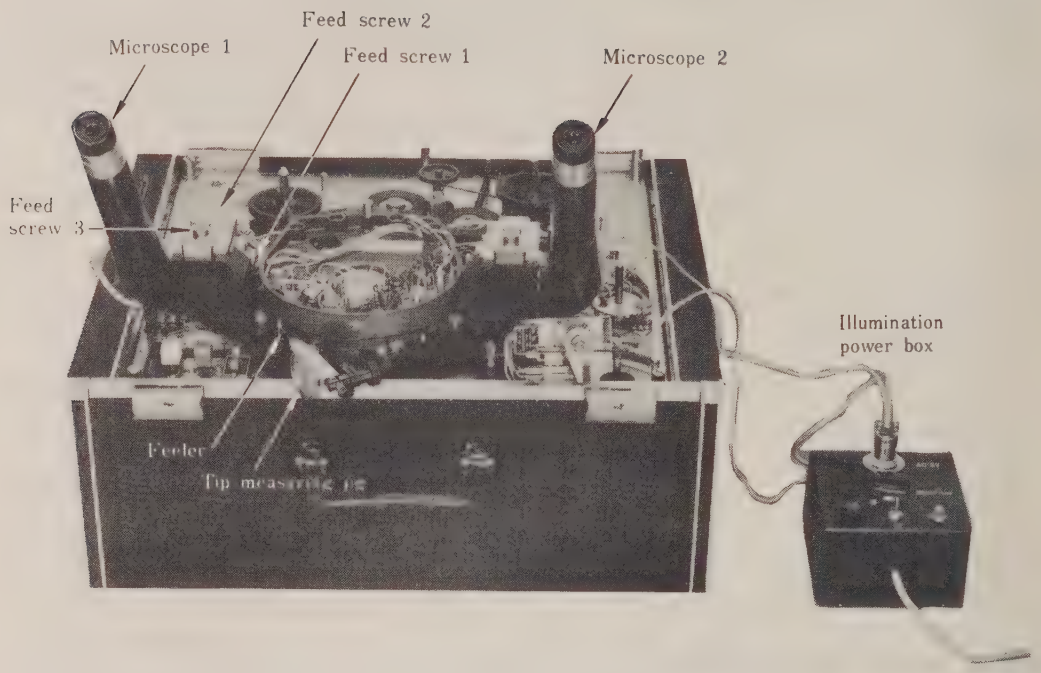


Fig. 4-84

-2. Focus adjustment of microscope

(1) While turning the video head disc by hand, adjust the video heads to the position as shown in Fig. 4-85. While looking into microscopes 1 and 2 alternately, adjust the feed screw (1) and the focus of the microscopes to obtain the best view of the video heads.

(2) Adjust the focus of the graticules by rotating the eye piece of the microscopes.

-3. Height adjustment of microscopes

Using microscope 2 adjust its height with feed screw (3) so that the position of the other video head as seen on the graticule is as shown in Fig. 4-86.

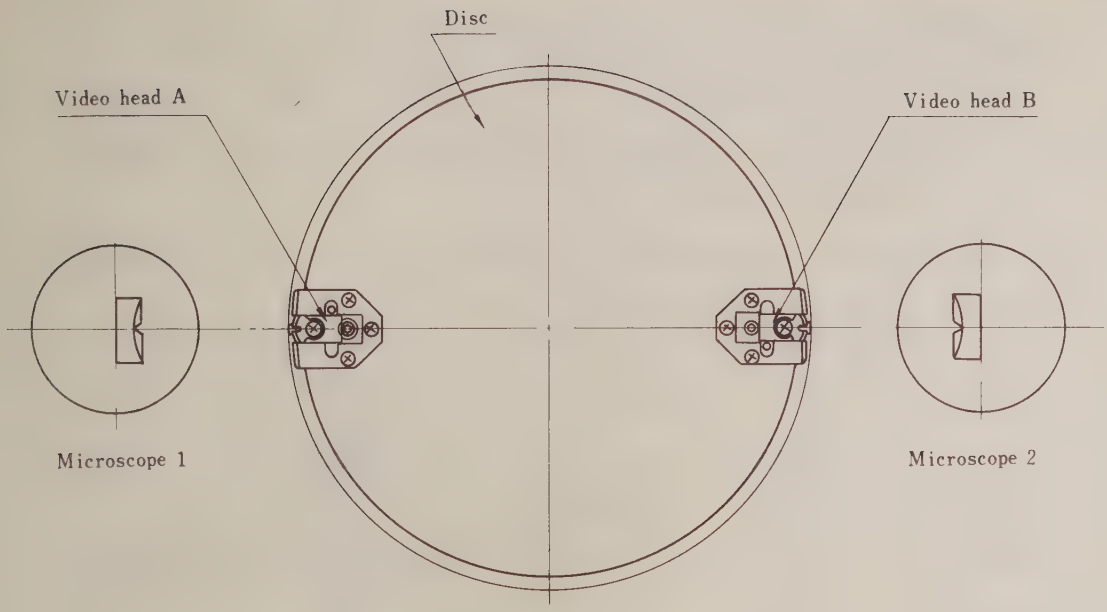


Fig. 4-85

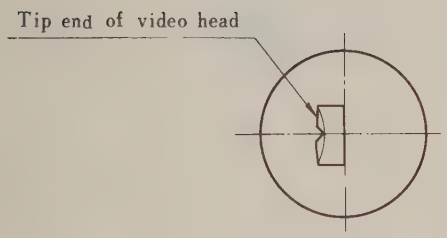


Fig. 4-86

-4. Confirmation of 180° division of video head

(1) In Fig. 4-85, move the gap of video head B to the center line of the graticule of microscope 2, and then look into microscope 1. If the gap of video head A is in line with the center line of the graticule, the 180° division is correct.

(2) If the gap of video head A is not in line with the center line of the graticule of microscope 1, adjust the latter with feed screw (2) to bring the gap of video head A to the center of the graticule. Referring to Fig. 4-85, turn the disc through half

a rotation, adjust the gap of video head A to the center line of the graticule of microscope 2, and look into microscope 1. If the gap of video head B is in line with the graticule center line, the video heads are 180° apart.

(3) If the gap of video head B cannot be adjusted to the center line of the graticule of microscope 1, the video heads on Item (2) are positioned as shown in Figs. 4-87 and 4-88, and must be adjusted as follows.

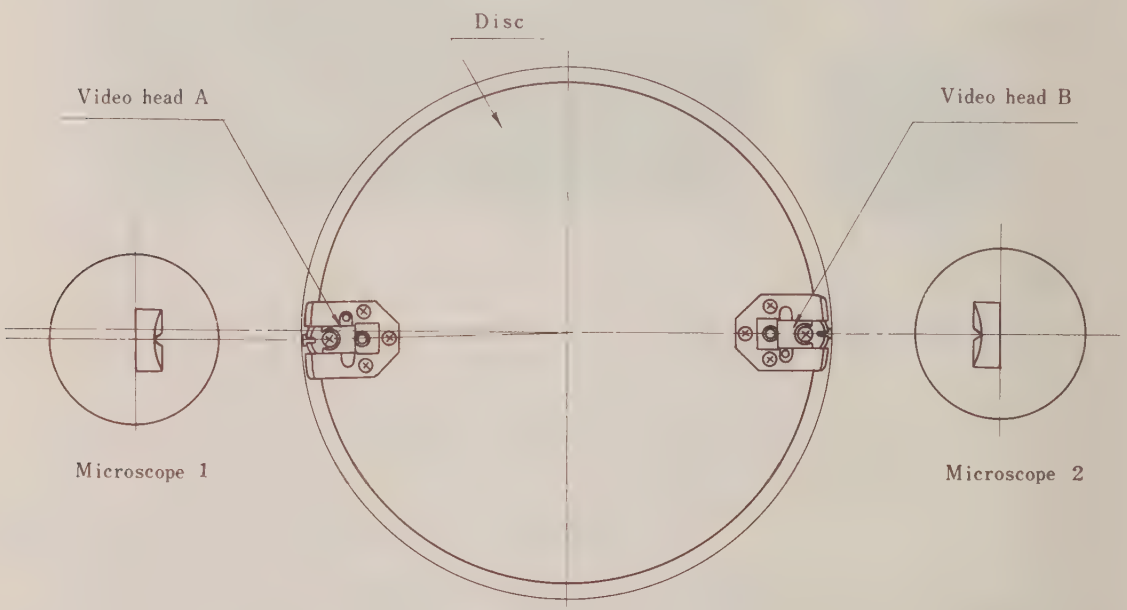


Fig. 4-87

a. Referring to Fig. 4-88, read the distance "a" from the center line of the graticule of microscope 1 to the gap of video head B.

b. While leaving the positions of heads as they are, and looking into microscope 1, rotate feed screw (2) to move the center line of the graticule of microscope 1 through a distance a/2 towards the gap of video head B (Fig. 4-89).

Note: In Item a. and b., it is assumed that the microscopes are accurately 180° divided.

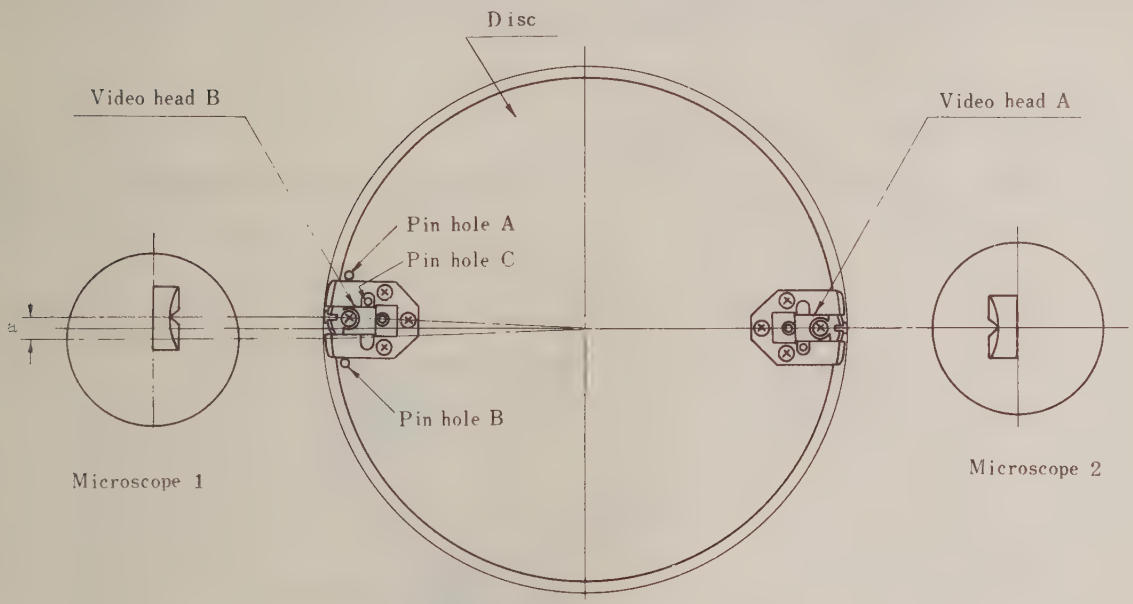
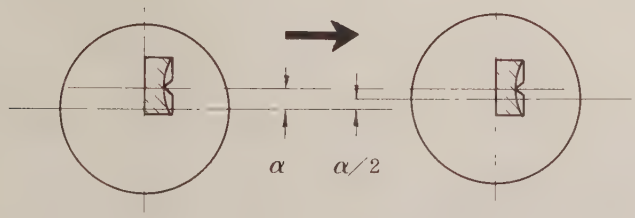


Fig. 4-88

Fig. 4-89



c. Next, loosen the mounting screw of video head B and the mounting screw of the video head holder. Insert the eccentric driver into hole A or B, and adjust the gap of video head B to the center line of the graticule of microscope 1. Retighten the video head mounting screw and the mounting screw of the video head holder.

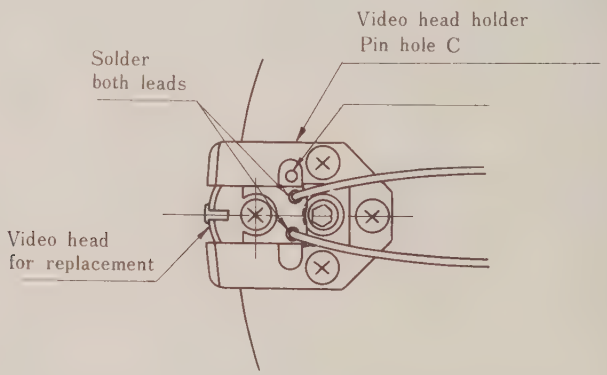
d. Referring to Fig. 4-88, turn the disc through half a rotation and adjust the gap of video head

A to coincide with the center line of the graticule of microscope 1. Look into microscope 2, and if the gap of video head B is in line with the graticule center line, the heads are 180° apart.

-5. Replacement of video head

After checking the 180° division of the video heads, remove the faulty head (A or B) from the disc, and mount wire and solder the replacement video head C as shown in Fig. 4-90 (of the two replacement video heads, use the one with larger video track.).

Fig. 4-90



-6. Tip projection adjustment (of video head C)

After mounting the replacement video head C, measure the tip projection of the new head using the small tester to read the projection of 90-120μ (first make sure that the probe of the tester is absolutely flush with the cylinder face.).

(1) If the small tester shows that the tip projection is less than 90μ, loosen the mounting screw of the new head C, and move it outwards by inserting the eccentric driver into hole C, and rotating it.

(2) In case the projection is more than 120μ, move it inwards.

(3) When the tip projection is correct, retighten the mounting screw of the head.

Note: Move the probe of the small tester away from the cylinder before test running.

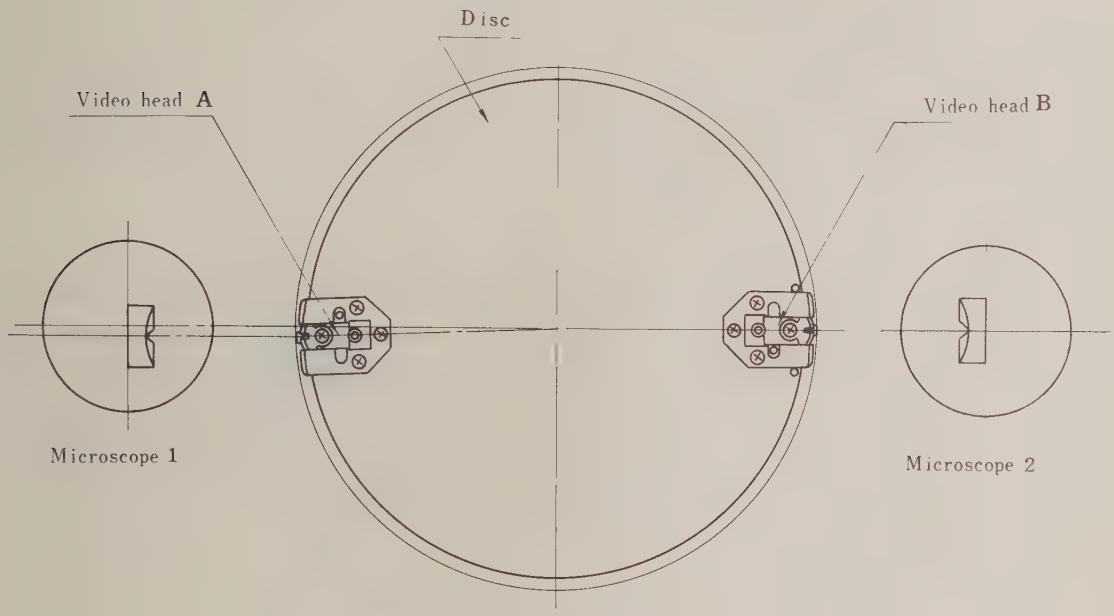


Fig. 4-91

-7. 180° adjustment (of video head C)

(1) If both microscopes are known to be 180° apart, proceed as follows referring to Fig. 4-91, adjust the gap of video head A or B to the graticule center line of microscope 2 and watch video head C with microscope 1. If the gap of the new head C is in line with the graticule center line of microscope 1, the 180° division is satisfactory.

(2) Should it be found that the gap of the new head C is not in line with the center line of the graticule (Fig. 4-88), insert the eccentric driver into hole A or B and rotate it so as to bring the gap of the new head C into line with the graticule center line of microscope 1.

(3) Turn the disc through half a rotation and look down microscope 2. If the gap of the new head C is in line with the center line of the graticule, the heads are 180° apart.

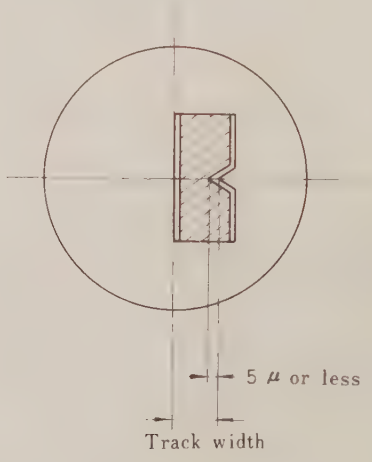
-8. Mounting and adjustment of the other video head D

Remove the video head A or B which was not replaced with the head C in Item -5, and mount the new video head C. Wire and solder it as shown in Fig. 4-90.

-9. Tip height adjustment

(1) Set up the replacement heads as shown in Fig. 4-93, and read the tip height of the second replacement head D using microscope 2. Turn the disc through half a revolution and measure the tip height of the head C. If the difference in the tip heights is less than 5μ, this is satisfactory.

Fig. 4-92



(2) If the difference is found to be more than 6μ, adjust the height adjusting screw of the video head D (set screw, located rear part of the head) by the L-shaped hexagon bar wrench to center on the both heads as shown in Fig. 4-94.

In this case do not loosen the head mounting screw.

Note: The tip height adjustment should be performed only by adjusting the head D, do not move the head C For this reason, the replacement head of having larger video track has been preferred as for the head C.

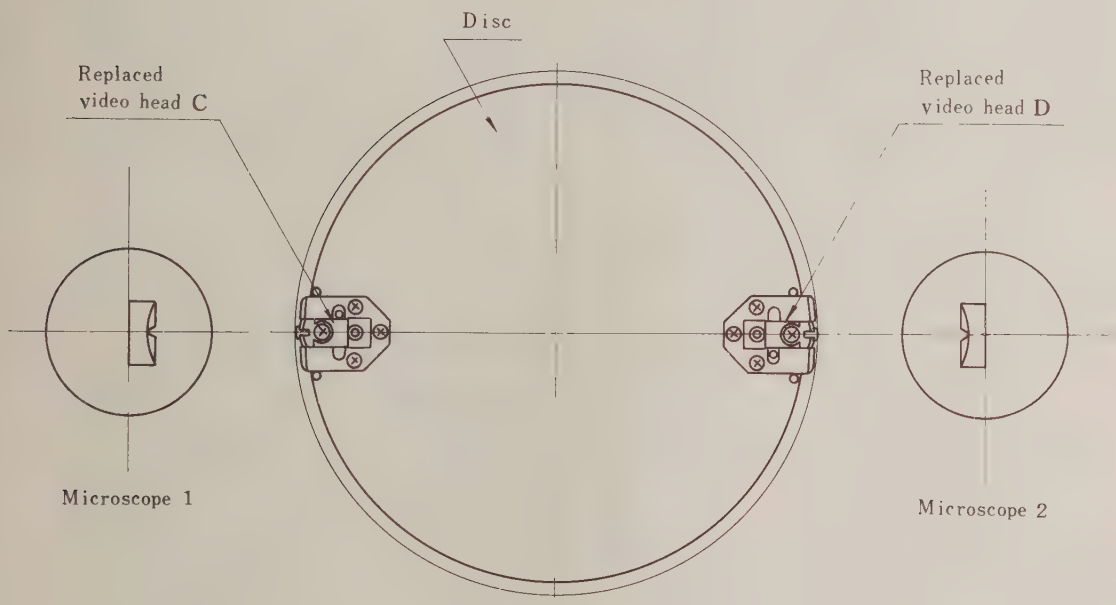
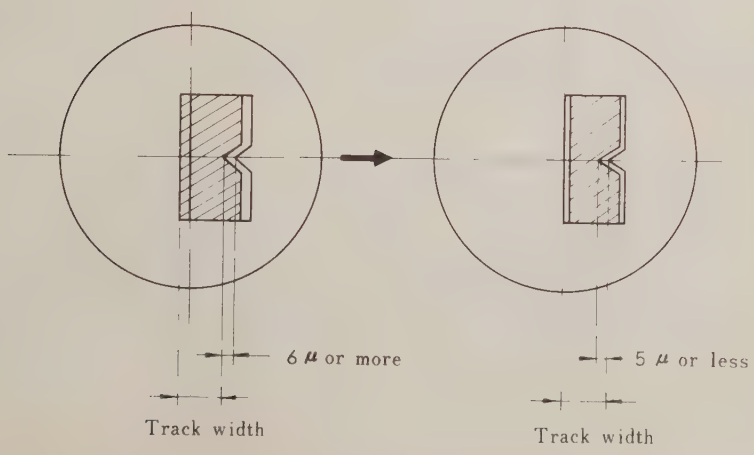


Fig. 4-93

Fig. 4-94



-10. Tip projection measurement of video head D and 180° division

After finishing the tip height adjustment of the replacement heads, measure the tip projection of the video head D. Finally adjust the head D so that both heads are exactly 180° apart. Setting up of the first video head C was completed under Item 5, 6 and 7.
So, adjust the head D within ±10μ difference to the head C. In case the 180° division adjustment is necessary, perform it by adjusting the video head holder of the head D by the head holder mounting jig as shown in Fig. 4-95 and 4-96.

Fig. 4-95

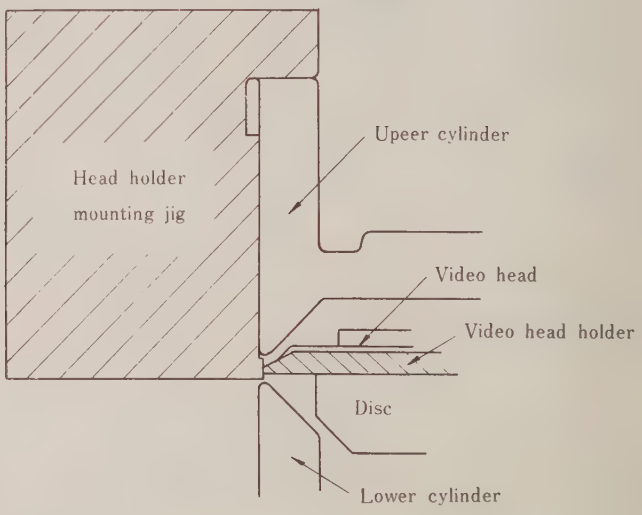
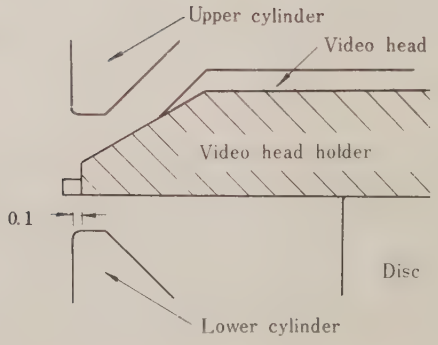


Fig. 4-96



2) Electrical Replacement Procedure (by monitor picture)

-1. Remove the deck plate cover.

-2. Remove the cylinder cover and replace the two defective heads with new ones.

Note: When doing this, be sure not to move the video head holder. If the latter remains in its original position and the old heads were correctly adjusted, it is likely that the new heads will closely be in the optimum locations.

-3. Measure the tip projection of the new heads by the small tester. If both are 90-120μ and the difference is within 10μ, it is proper.

-4. Make a short recording and play it back. Turn the TRACKING control and examine at both positions where give correct tracking (home tracking and reversed tracking). If there is no jitter or curvature at the top of the monitor screen, the 180° division of the new heads may be considered correct. If the picture shows jitter or curvature at the top, the heads must be adjusted. So proceed as follows.

(1) Referring to Fig. 4-97, put a mark on one of the video heads. Call this head A. Using eccentric screwdriver, move this head slightly to the left or to the right.

(2) Make a short recording and play it back, if the picture has less jitter at the top on both home and reversed tracks, then the head has been moved in the right direction. Continue the adjustment until a picture which is free from a jitter on both home and reversed tracks is obtained.

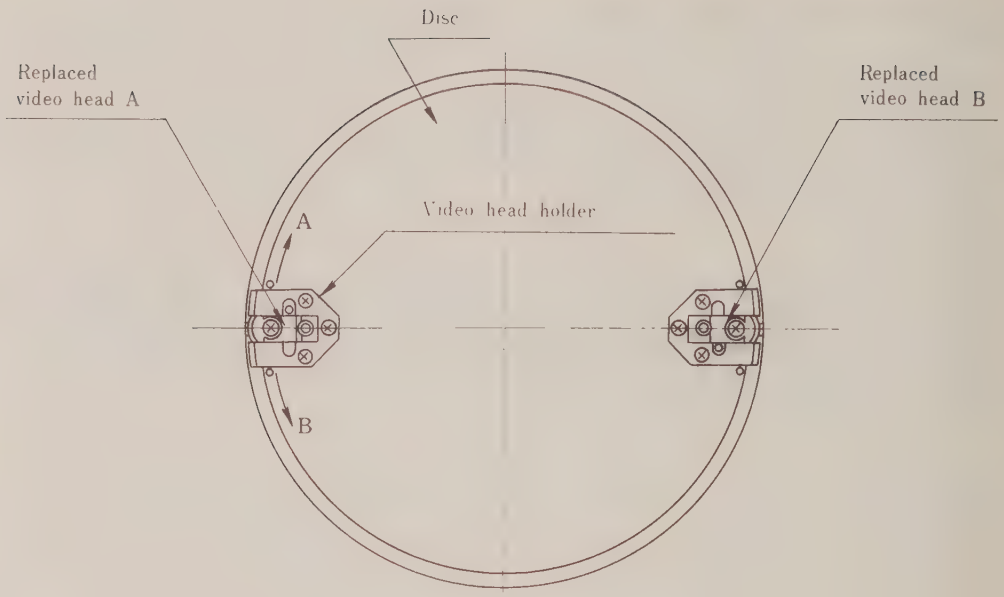


Fig. 4-97

Note: If after moving head A, the picture is seen to have more jitter than before, then the head has been moved in the wrong direction. If a jitter-free picture cannot be obtained by moving one head, the other must also be adjusted.
Check the tip projection after the 180° adjustment is completed.

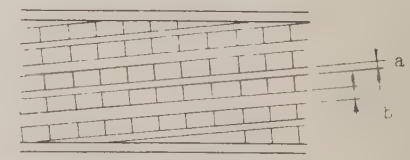
-5. Next, make a short recording and play it back. Examine the picture on both tracks, and if it is free from jitter and curvature at the top, develop the tape and study the pattern. If the horizontal sync pulses are in straight lines across the tape as shown in Fig. 4-98, this is correct.

Good

Fig. 4-98

Bad (H/2 deviation)

Fig. 4-99



Bad (Inadequate height) a < b

Fig. 4-100

-6. In the case of Figs. 4-99 and 4-100, make adjustments as follows.

(1) Fig. 4-99 .... H/2 deviation (H/2=0.45mm)

This pattern shows heads adjusted so as to produce a positional error of H/2. There will be no jitter but neither will there be interchangeability between other machines.
Adjust as under Item -4 (1) and (2).

Note: Such deviation will not occur if the video heads are replaced without moving the video head holder.

(2) Fig. 4-100 .... Incorrect tip height

Insert 5μ, 10μ or 15μ shims under the lower head to give the best adjustment. A trial and error method must initially be used to find out which head is lower. A short recording must be made and the tape developed after every adjustment. If the ratio of "a" and "b" in Fig. 4-100 is lower than 1 : 2, then this is satisfactory.

Note: After the height adjustment is completed, check and adjust the 180° division. If a head has to be moved, make sure that it is the one beneath which no shim has been placed.
Develop the tape and check the pattern.

5. Lubricating and Cleaning Points

1) Lubricating Points

Refer to Fig. 4-101. Lubrication should be carried out every 500 hours.

-1. (A) Idler (three points)

Remove the E type ring, pull off the idler, and wipe the shaft with a clean cloth. Apply motor oil #30 to the idler bearing and the felt.

-2. (B) Reel holder (two points)

Remove the reel holder (1) assembly, wipe the reel holder shaft with a clean cloth, and apply motor oil #30 to the reel holder shaft.

-3. (C) Guide roller

Remove the guide roller, wipe the guide roller shaft with a clean cloth and apply motor oil #30 to the bearing of the guide roller. If the roller is noisy at high speed, grease may be used on the bearing.

-4. (J) Cam

Apply grease (Mobil No. 2) to the outer surface of the cam.

-5. (K) Cam roller (four places)

Apply grease (Mobil No. 2) to the surface of the cam roller.

2) Cleaning Points

Cleaner - Solvent naphtha, ethyl alcohol or benzine.
The cleaning points are D, E, F, G, H, L and M. The tape path surfaces of the inclined cone guide posts D and E in particular are susceptible to dirt. If dirt is allowed to

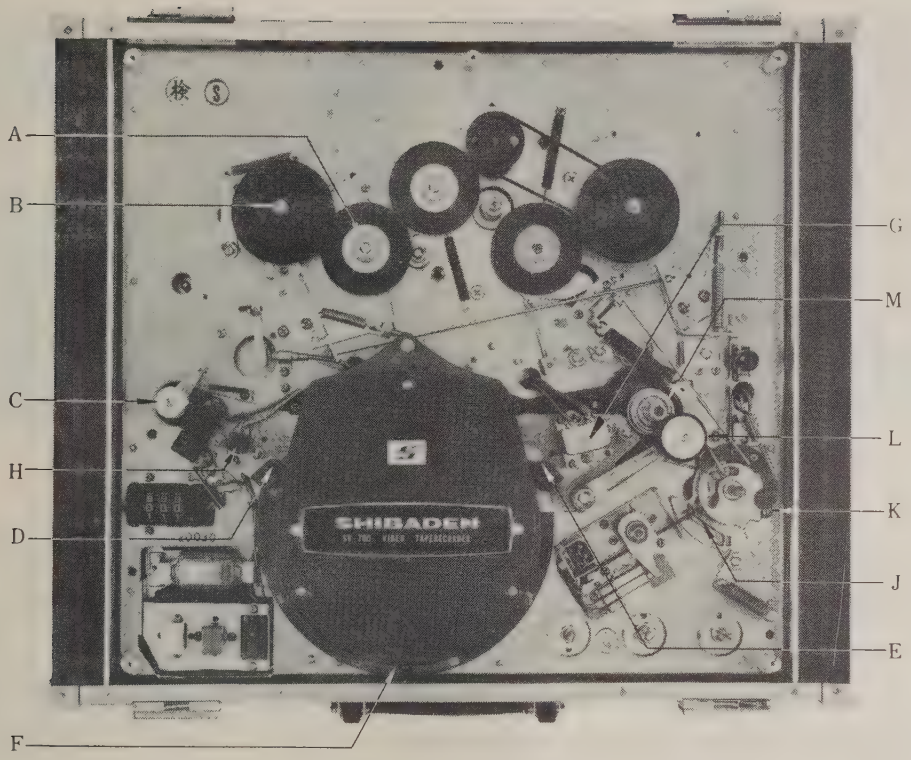


Fig. 4-101 Photo shows SV-700US(ES)

accumulate, poor interchangeability will result. When the pinch roller L is cleaned, wipe it with a clean dry cloth, or with a very small amount of naphtha, ethyl alcohol or benzine.

6. Development of Recorded Tape

1) Tools

Developing solution (solvent naptha)
Iron powder
Container (such as saucer or shallow dish)
Adhesive transparent tape (width is greater than 1/2")
Flat aluminum or plastic (non-magnetic)
Plain paper
Stirring rod (match sticks, etc.)
Cloth

2) Procedure

(1) Put a little iron powder and development solution into the container and stir (Fig. 4-102).
(2) Put the recorded tape in the developing solution with the coated surface uppermost.
Move the tape through the liquied so as to evenly distribute the powder over its surfaces (Fig. 4-103).
(3) Turn the tape over and again immerse it in the solution to wash off the surplus powder (Fig. 4-104).

Fig. 4-102

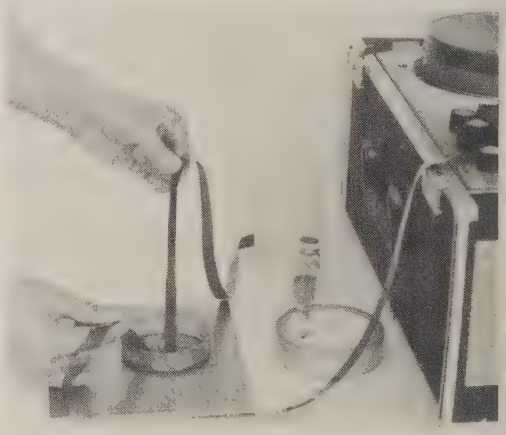


Fig. 4-103

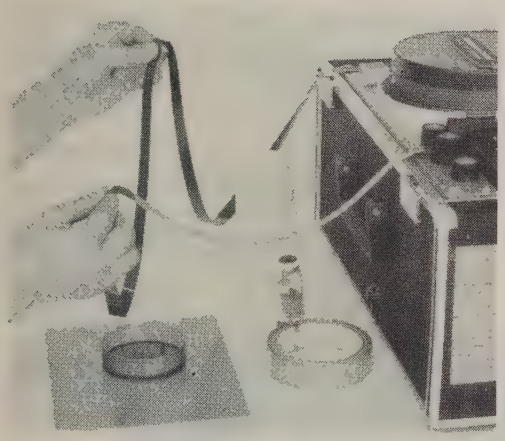


Fig. 4-104

Fig. 4-105

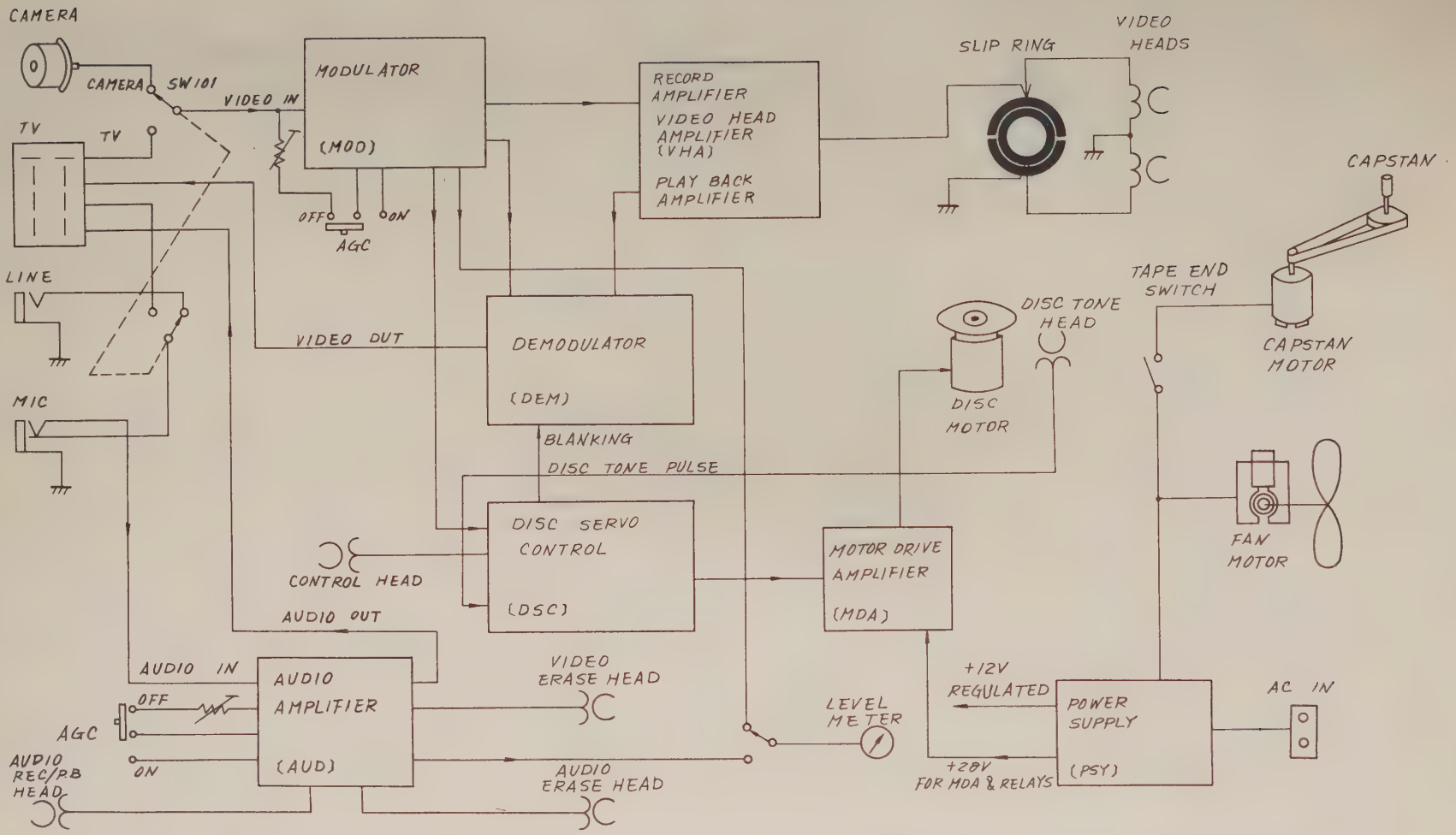
(4) Let the tape dry naturally, and a pattern will appear. Place the tape, with pattern uppermost, on the plate. Cut off a convenient length of tape and apply it to the tape being careful not to smear the track pattern and that there are no bubbles between the two surfaces. Now gently pull the two tapes appart and be careful that the adhesive tape does not wind itself into a roll. It is easier for two people to do this. See Fig. 4-105 and 4-106.

Fig. 4-106

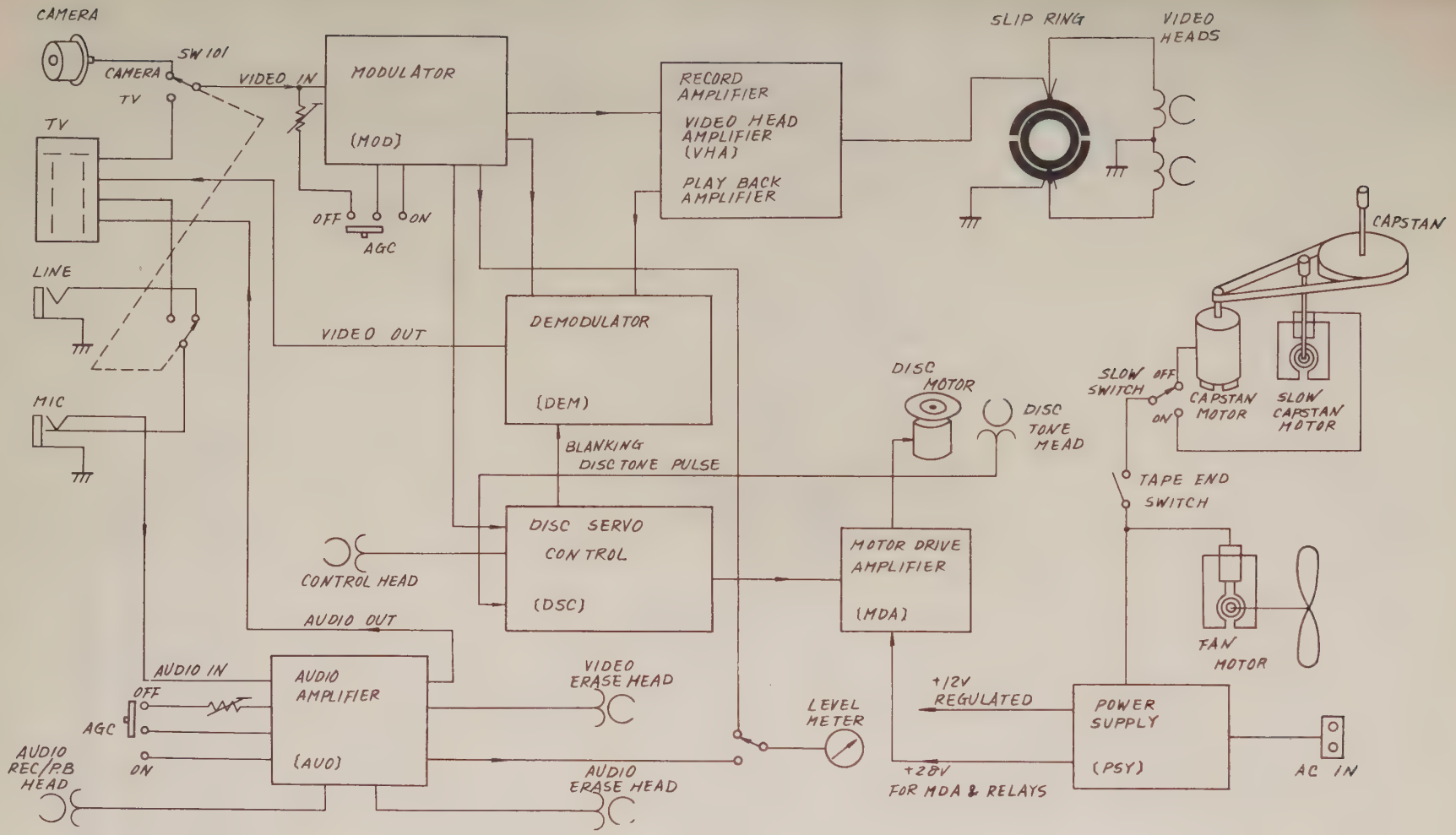
(5) The track pattern is thus transferred to the adhesive tape. If it is desired that the record be kept permanently, stick the adhesive tape to a piece of paper. It is best however, first to put a piece of clean adhesive tape onto the paper and stick the record of the track pattern on top of this so that the record is sandwiched between the two tapes. See Fig. 4-107.

Fig. 4-107

(6) Finally, moisten a cloth with the developing solution and wipe the remaining iron powder from the video tape. Iron powder may damage the video heads.

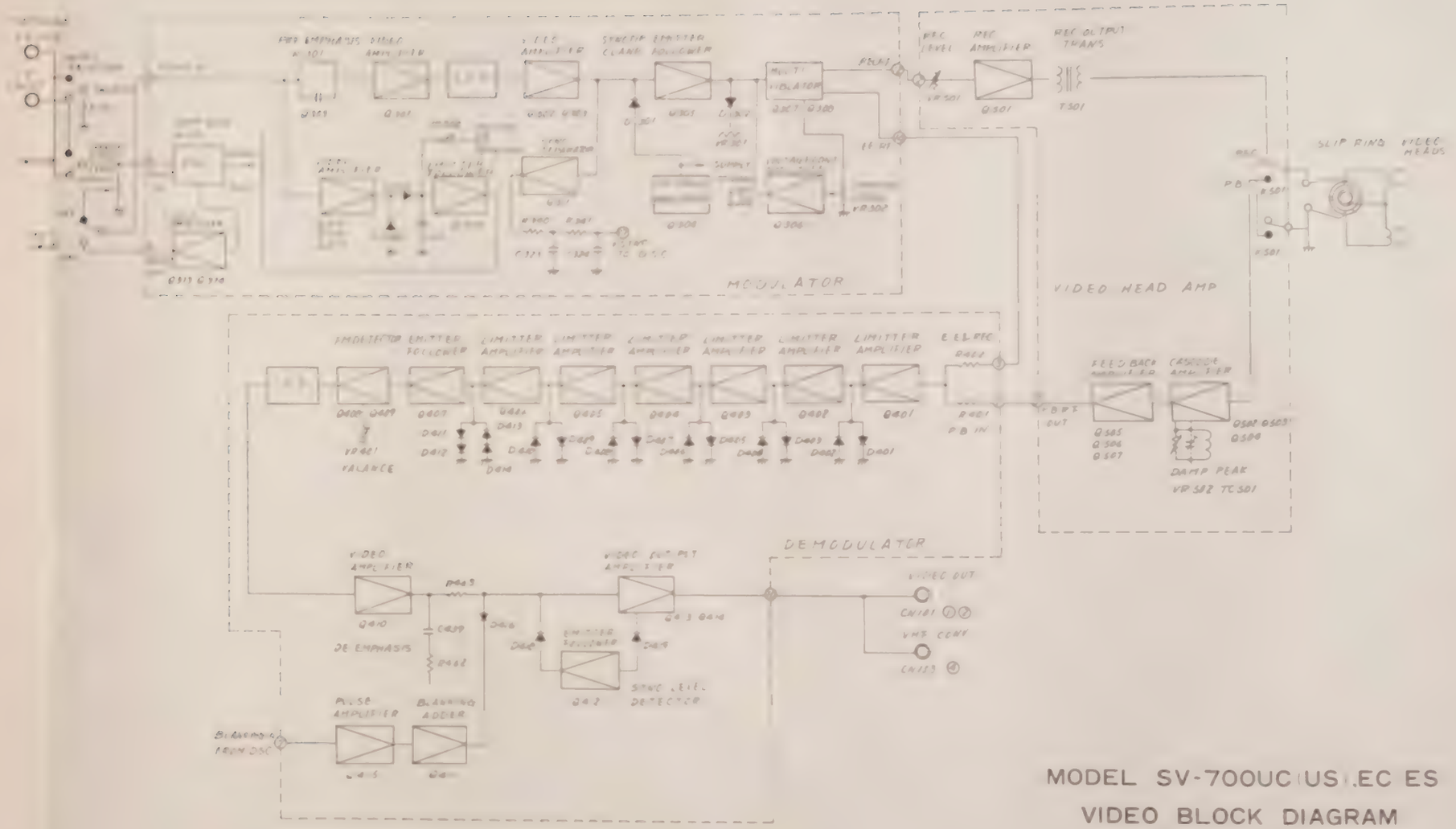


MODEL SV-700UC,EC
SIMPLIFIED BLOCK DIAGRAM

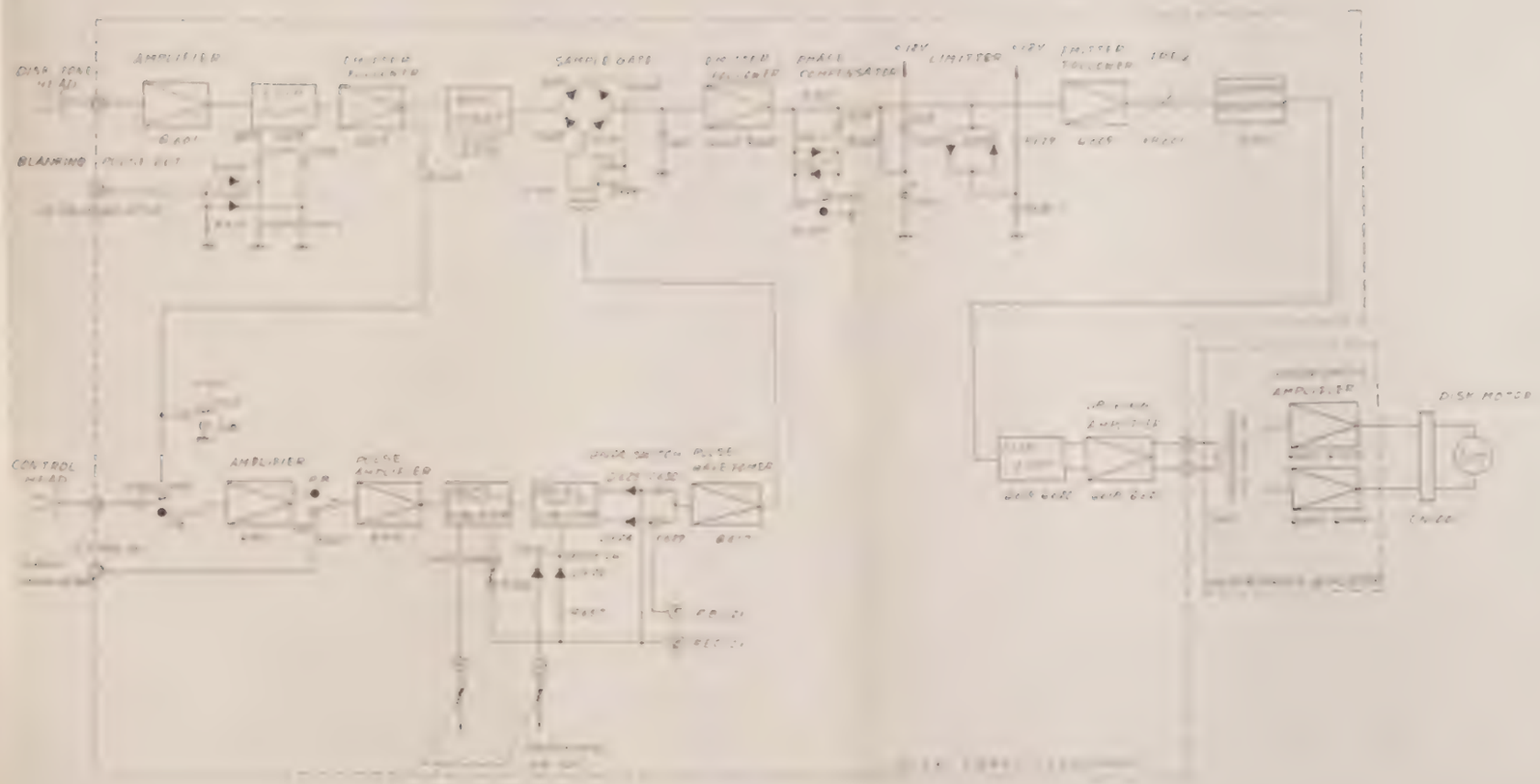


MODEL SV-700US,ES

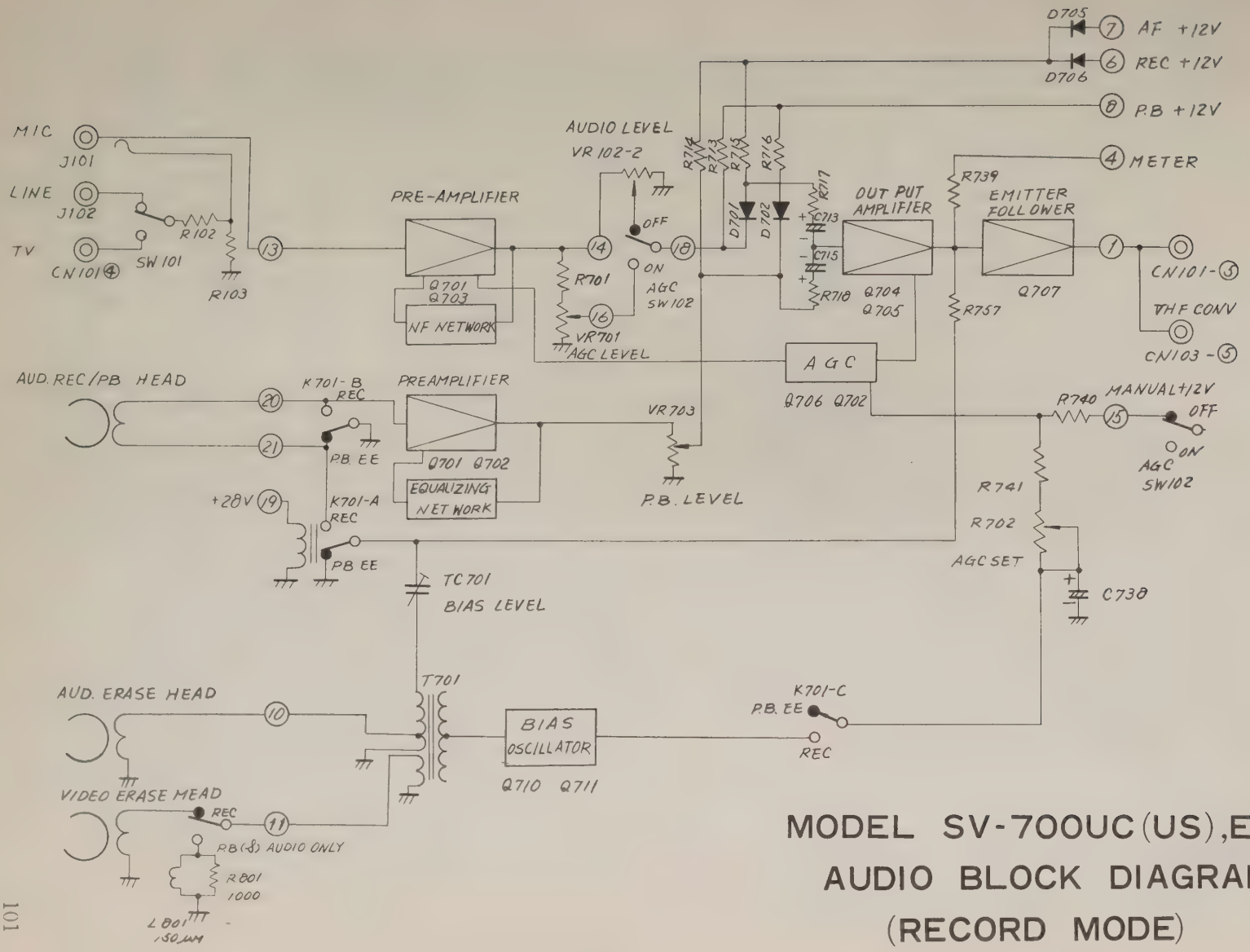
SIMPLIFIED BLOCK DIAGRAM



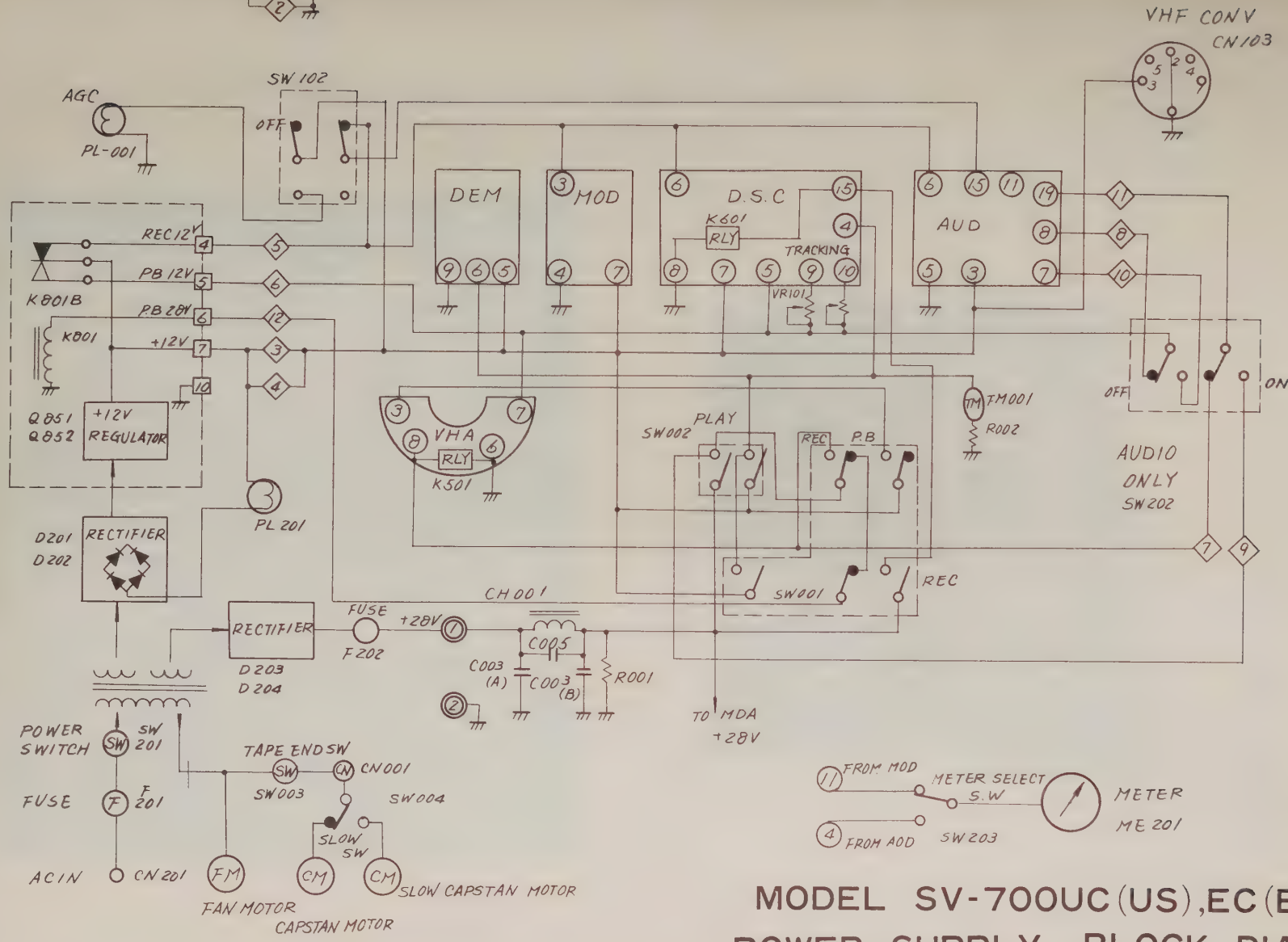
MODEL SV-700UC(US).EC ES
VIDEO BLOCK DIAGRAM
(RECORD MODE



MODEL SV-700UC(US).EC.ES
SERVO BLOCK DIAGRAM
(RECORD MODE)

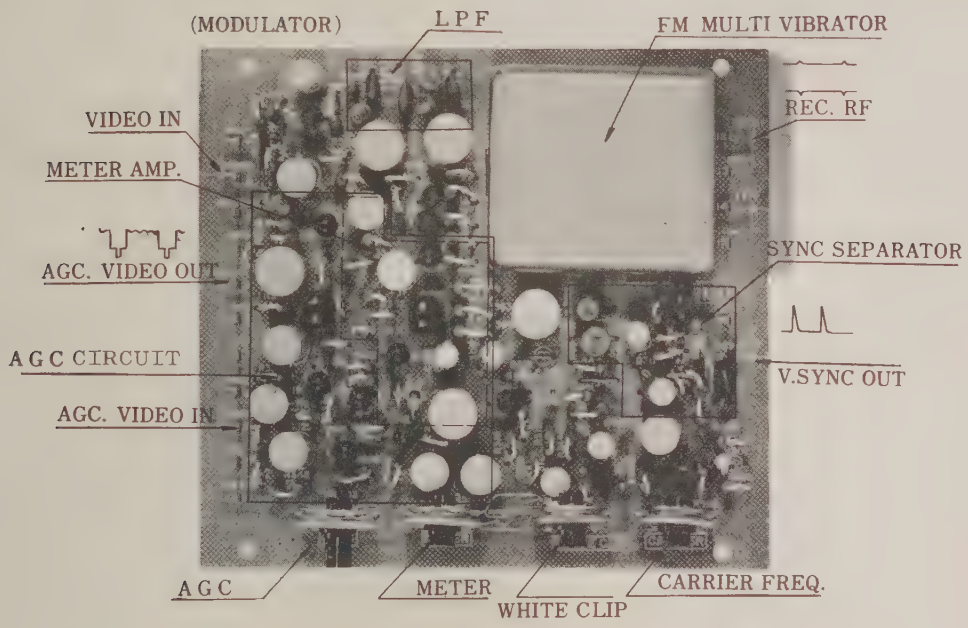


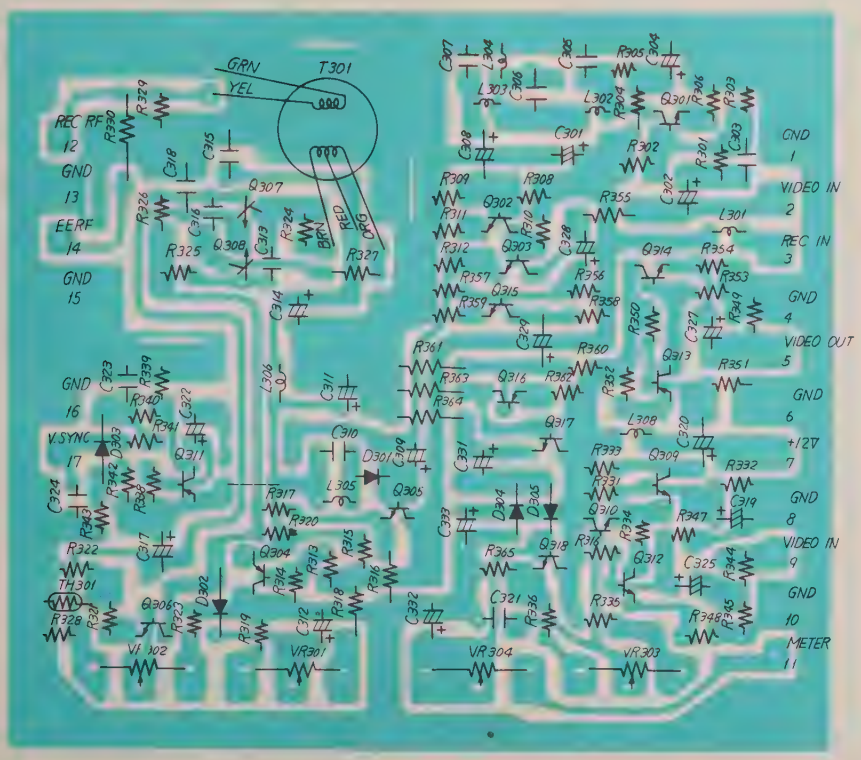
MODEL SV-700UC(US),EC(ES)
AUDIO BLOCK DIAGRAM
(RECORD MODE)



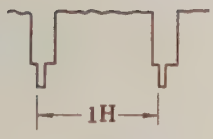
MODEL SV-700UC(US),EC(ES)
POWER SUPPLY BLOCK DIAGRAM

SV-700UC(US),EC(ES) MODULATOR

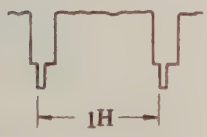




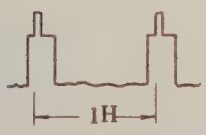
MODULATOR WAVEFORMS

301 

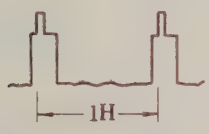
1.0Vp-p

302 

0.5Vp-p

303 

0.6Vp-p

304 

0.2Vp-p

305

0.55Vp-p

306

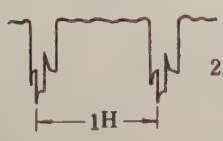
0.55Vp-p

307

0.1Vp-p

308

0.4Vp-p

309 

2.0Vp-p

310

2.0Vp-p

311

1.1Vp-p

312

5.5Vp-p

313

5.5Vp-p

314

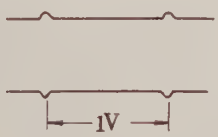
1.8Vp-p

315

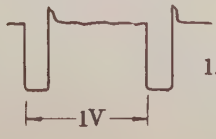
1.7Vp-p

316

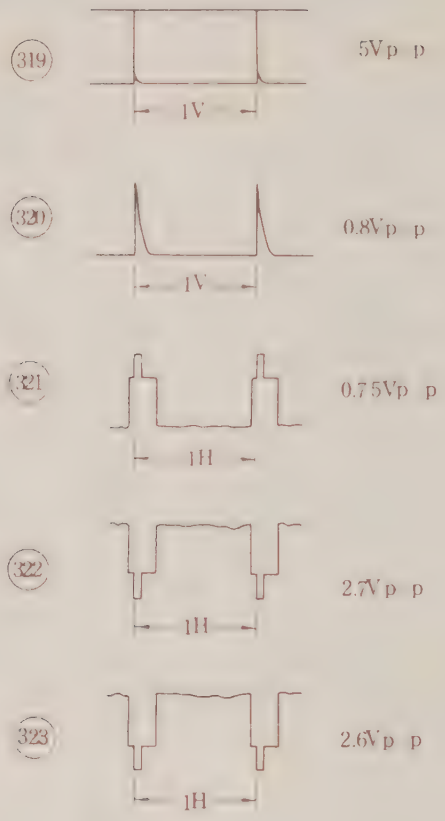
1.4Vp-p

317 

1.45Vp-p

318 

1.5Vp-p


319
5Vp p
1V
320
0.8Vp p
1V
321
0.75Vp p
1H
322
2.7Vp p
1H
323
2.6Vp p
1H

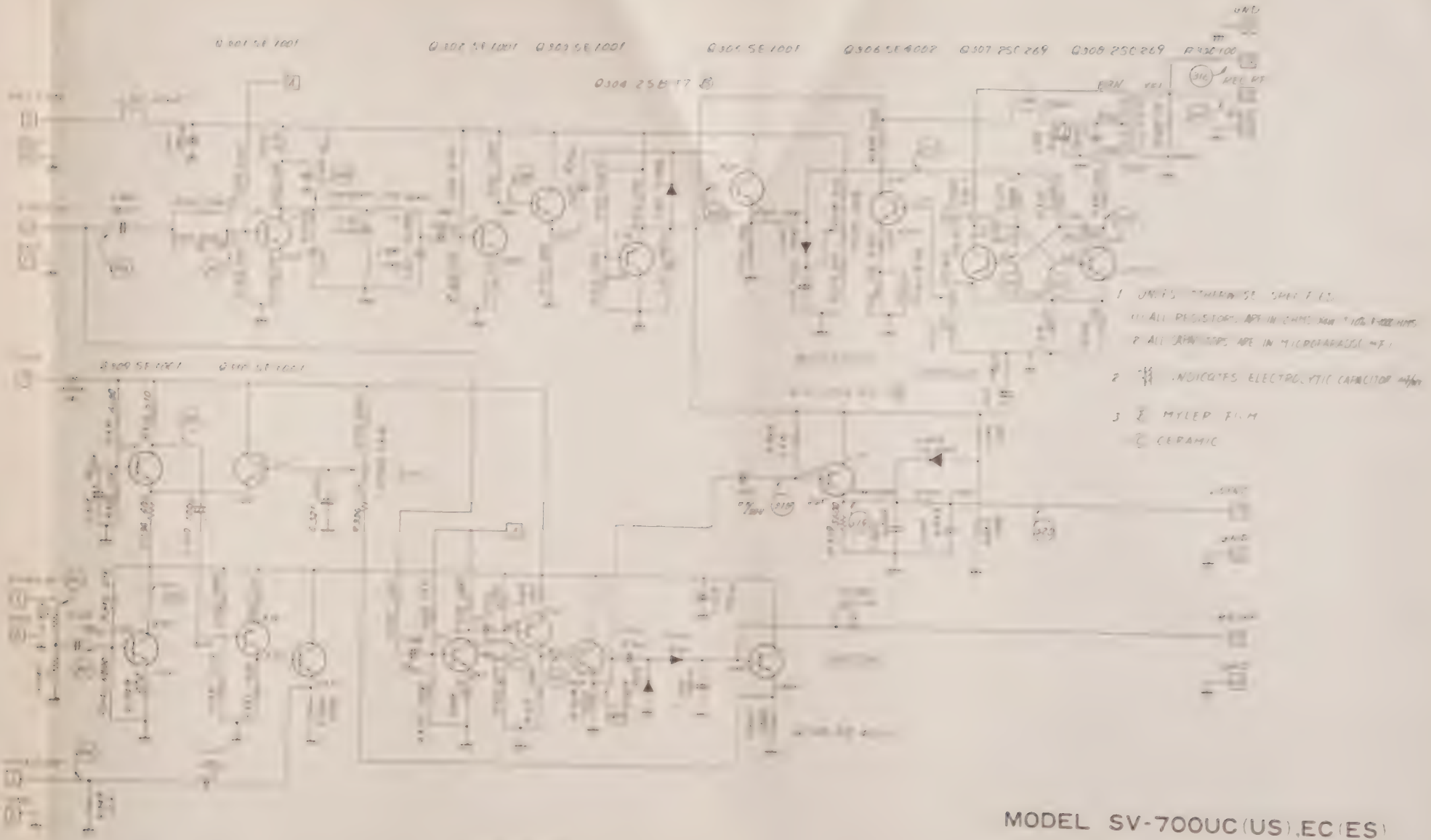
MODULATOR

Symbol	Description				Remarks	Stock No.
	Transistors					
Q 301	SE1001					011601
302	"					"
303	"					"
304	2SB77 Ⓑ					011201
305	SE1001					011601
306	SE4002					011603
307	2SC269					011301
308	"					"
309	SE1001					011601
310	"					"
311	2SA351 Ⓑ					011102
312	SE1001					011601
313	2N3638					011503
314	SE1001					011601
315	"					"
316	2N3638					011503
317	SE1001					011601
318	SE4002					011603
	Diodes					
D 301	1N34A					012104
302	"					"
303	"					"
304	1N60					012105
305	"					"
	Thermistors					
TH 301	D-2B					012211
	Resistors					
R 301	Carbon	1/4 W	2700Ω	5%		021506
302	"	"	5100Ω	10%		021685
303	"	"	560Ω	"		021625
304	"	"	470Ω	"		021624
305	"	"	1000Ω	"		021629
306	"	"	100Ω	"		021616
307	Not Used					
308	Carbon	1/4 W	8200Ω	10%		021640
309	"	"	1200Ω	"		021630
310	"	"	"	"		"

Symbol	Description				Remarks	Stock No.
R 311	Carbon	1/4 W	220Ω	10%		021620
312	"	"	1000Ω	"		021629
313	"	"	2700Ω	5%		021506
314	"	"	3300Ω	"		021507
315	"	"	220Ω	10%		021620
316	"	"	2000Ω	"		021682
317	"	"	1000Ω	"		021629
318	"	"	470Ω	"		021624
319	"	"	560Ω	"		021625
320	"	"	3900Ω	"		021636
321	"	"	620Ω	"		021680
322	"	"	270Ω	"		021621
323	"	"	390Ω	"		021623
324	"	"	270Ω	5%		021502
325	"	"	3300Ω	"		021507
326	"	"	"	"		"
327	"	"	270Ω	"		021502
328	"	"	220Ω	10%		021620
329	"	"	75Ω	"		021614
330	"	"	100Ω	"		021616
331	"	"	6200Ω	"		021686
332	"	"	10kΩ	"		021641
333	"	"	510Ω	"		021679
334	"	"	680Ω	"		021627
335	"	"	6800Ω	"		021639
336	"	"	10kΩ	"		021641
337	Not Used	"	4700Ω	"		021637
338	Carbon	1/4	56kΩ	10%		021650
339	"	"	"	"		"
340	"	"	5100Ω	"		021685
341	"	"	"	"		"
342	"	"	1000Ω	"		021629
343	"	"	"	"		"
344	"	"	47Ω	"		021611
345	"	"	51Ω	"		021675
346	"	"	27kΩ	"		021646
347	"	"	6800Ω	"		021639
348	"	"	220Ω	"		021620
349	"	"	10kΩ	"		021641
350	"	"	8200Ω	"		021640
351	"	"	22kΩ	"		021645
352	"	"	510Ω	"		021679
353	"	"	1500Ω	"		021631
354	"	"	1000Ω	"		021629

Symbol	Description				Remarks	Stock No.
R 355	Carbon	1/4 W	220Ω	10%		021620
356	"	"	15kΩ	"		021643
357	"	"	5600Ω	"		021638
358	"	"	1000Ω	"		021629
359	"	"	510Ω	"		021679
360	"	"	4700Ω	"		021637
361	"	"	20kΩ	"		021688
362	"	"	390Ω	"		021623
363	"	"	1500Ω	"		021631
364	"	"	1000Ω	"		021629
365	"	"	"	"		"
366	"	"	47Ω	"		021611
VR 301	Var Carbon		500Ω	B		020159
302	"		"	"		"
303	"		5kΩ	"		020161
304	"		50kΩ	"		020162
	Capacitors					
C 301	Elyc	15 V	100μF			031115
302	"	6 V	"			031102
303	Mica	500 WV	200pF			035111
304	Elyc	15 V	10μF			031112
305	Mica	500 WV	40pF			035106
306	"	"	56pF			035108
307	"	"	40pF			035106
308	Elyc	15 V	100μF			031115
309	"	25 V	3μF			031119
310	Not Used					
311	Elyc	15 V	100μF			031115
312	"	"	10μF			031112
313	Mica	500 WV	25pF			035105
314	Elyc	50 V	0.5μF			031150
315	Ceramic	25 WV	0.1μF			036113
316	Mica	500 WV	25pF			035105
317	Elyc	6 V	100μF			031102
318	Ceramic	25 WV	0.1μF			036113
319	Elyc	10 V	30μF			031106
320	"	6 V	100μF			031102
321	"	10 V	30μF			031106
322	"	50 V	0.5μF			031150
323	Polyester	50 WV	0.33μF			034111
324	"	"	"			"

Symbol	Description			Remarks	Stock No.
C 325	Elyc	6 V	100μF		031102
326	Not Used				
327	Elyc	15 V	100μF		031115
328	"	10 V	30μF		031106
329	"	"	"		"
330	Not Used				
331	Elyc	25 V	3μF		031119
332	"	6 V	100μF		031102
333	"	15 V	100μF		031115
	Inductors				
L 301		27μH	10%		017202
302		68μH	"		017205
303		"	"		"
304		15μH	"		017215
305	Not Used				
306		27μH	"		017202
T 301	Transformer, Output		MO-71		017102

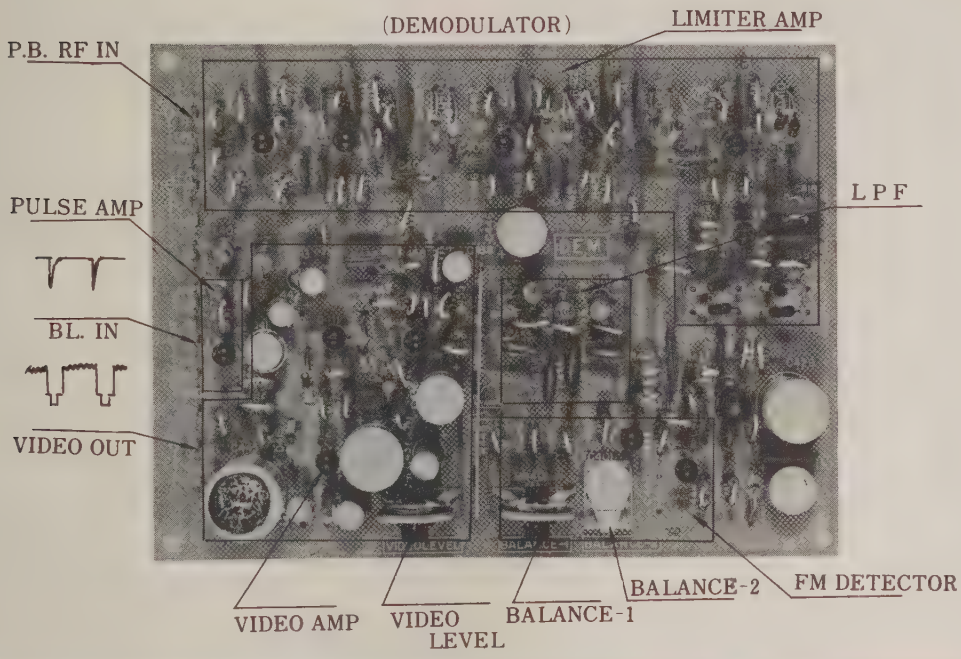


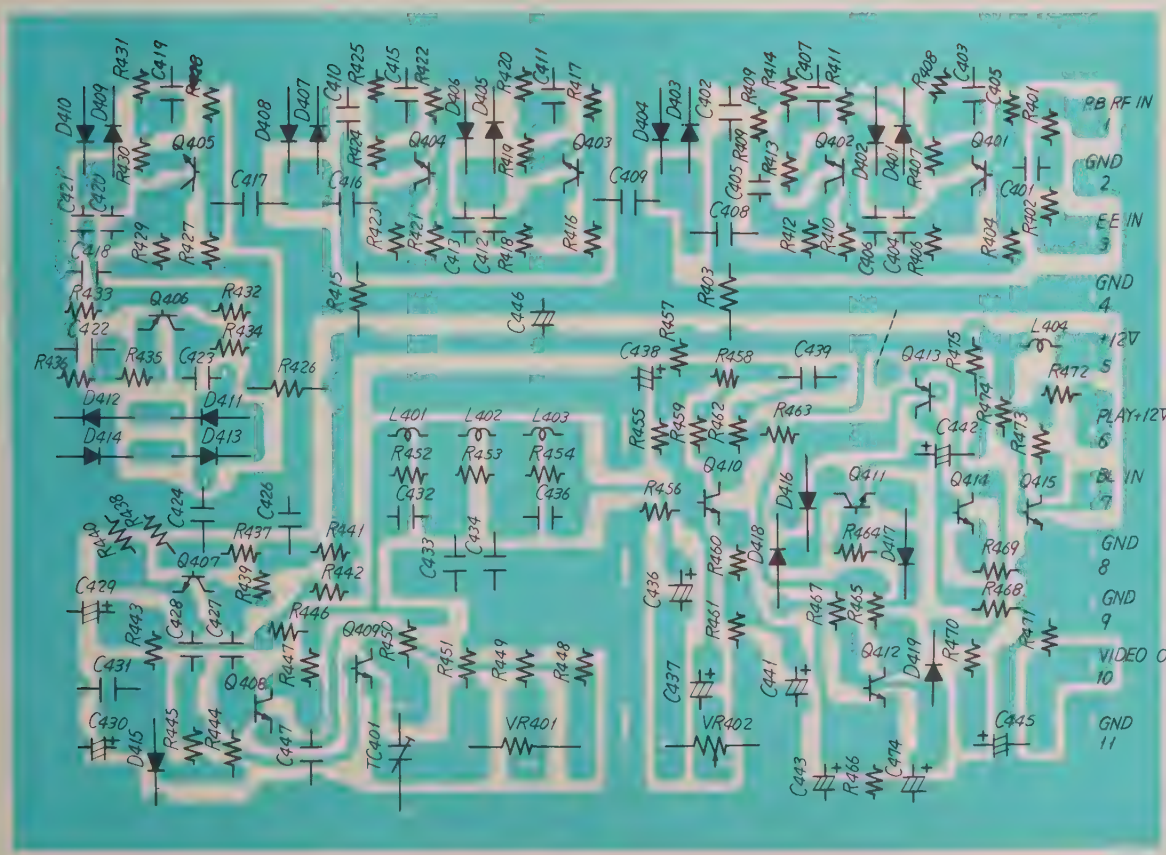
MODEL SV-700UC(US),EC(ES)

MODULATOR

SCHEMATIC DIAGRAM

SV-700UC(US),EC(ES) DEMODULATOR





DEMODULATOR WAVEFORMS

401

1.5±0.6Vp-p

402

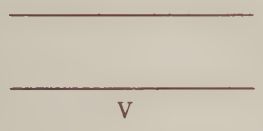
1.4Vp-p

403 ~ 404

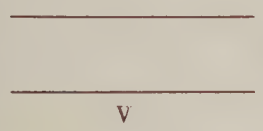
0.7Vp-p

405 ~ 406

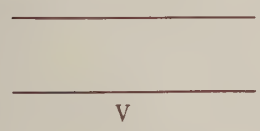
0.5Vp-p

407 ~ 408 

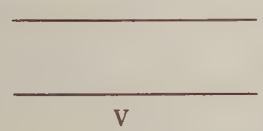
0.65Vp-p

409 ~ 410 

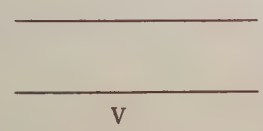
0.75Vp-p

411 ~ 412 

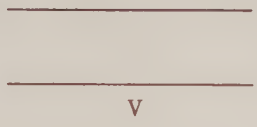
1.3Vp-p

413 ~ 414 

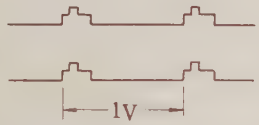
2.5Vp-p

415 ~ 416 

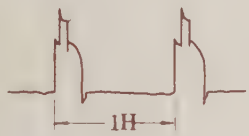
2.4Vp-p

417 ~ 418 

1.4Vp-p

419 

1.8Vp-p

420 

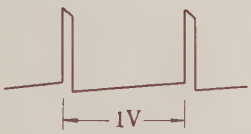
0.36Vp-p

421

0.26Vp-p

422

2.4Vp-p

423 

1.9Vp-p

424

2.4Vp-p

425

1.8Vp-p

426

2.4Vp-p

427
7Vp-p
1V
428
1.2Vp-p
1H

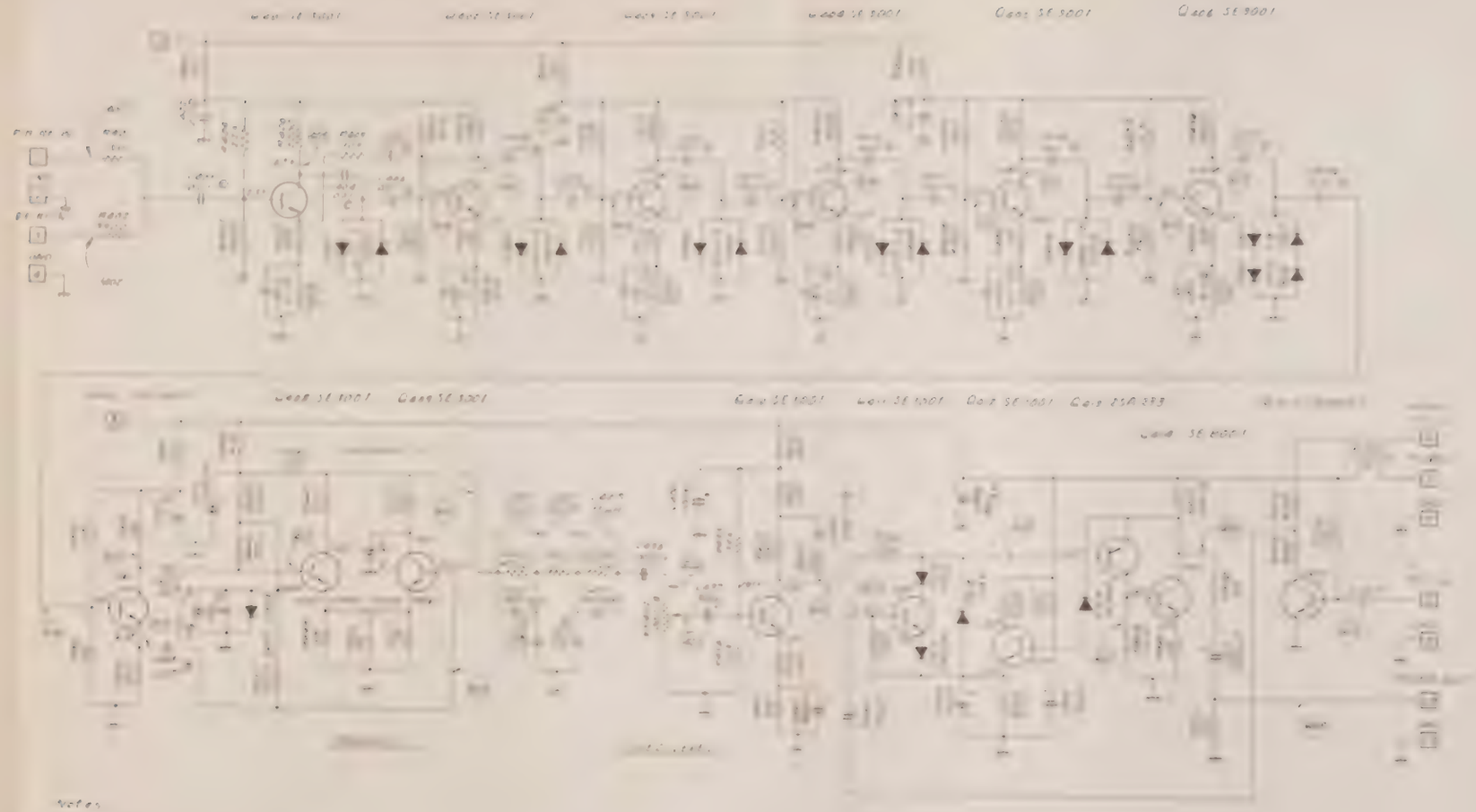
DEMODULATOR

Symbol	Description				Remarks	Stock No.
	Transistors					
Q 401	SE3001					011602
402	"					"
403	"					"
404	"					"
405	"					"
406	"					"
407	2N3643					011505
408	SE3001					011602
409	"					"
410	SE1001					011601
411	"					"
412	"					"
413	2SA233					011101
414	SE8001					011609
415	SE4002					011603
	Diodes					
D 401	1S73A					012101
402	"					"
403	"					"
404	"					"
405	"					"
406	"					"
407	"					"
408	"					"
409	1S306					012102
410	"					"
411	"					"
412	"					"
413	"					"
414	"					"
415	1N34A					012104
416	1N60					012105
417	FDH600					012126
418	1N60					012105
419	1N34A					012104
	Resistors					
R 401	Carbon	1/4 W	150Ω	10%		021618
402	"	"	3900Ω	"		021636
403	"	"	100Ω	"		021616
404	"	"	22kΩ	"		021645

Symbol	Description				Remarks	Stock No.
R 405	Carbon	1/4 W	8200Ω	10%		021640
406	"	"	2200Ω	"		021633
407	"	"	330Ω	"		021622
408	"	"	470Ω	"		021624
409	"	"	10kΩ	"		021641
410	"	"	22kΩ	"		021645
411	"	"	6800Ω	"		021639
412	"	"	1000Ω	"		021629
413	"	"	68Ω	"		021613
414	"	"	220Ω	"		021620
415	"	"	150Ω	"		021618
416	"	"	22kΩ	"		021645
417	"	"	5600Ω	"		021638
418	"	"	1000Ω	"		021629
419	"	"	100Ω	"		021616
420	"	"	220Ω	"		021620
421	"	"	22kΩ	"		021645
422	"	"	5600Ω	"		021638
423	"	"	1000Ω	"		021629
424	"	"	100Ω	"		021616
425	"	"	220Ω	"		021620
426	"	"	100Ω	"		021616
427	"	"	22kΩ	"		021645
428	"	"	4700Ω	"		021637
429	"	"	1000Ω	"		021629
430	"	"	100Ω	"		021616
431	"	"	150Ω	"		021618
432	"	"	15kΩ	"		021643
433	"	"	3900Ω	"		021636
434	"	"	1000Ω	"		021629
435	"	"	220Ω	"		021620
436	"	"	100Ω	"		021616
437	"	"	15kΩ	"		021643
438	"	"	10kΩ	"		021641
439	"	"	220Ω	"		021620
440	"	"	"	"		"
441	"	"	100Ω	"		021616
442	"	"	470Ω	"		021624
443	"	"	3300Ω	"		021635
444	"	"	220Ω	5%		021501
445	"	"	"	"		"
446	"	"	1200Ω	10%		021630
447	"	"	220Ω	5%		021501
448	"	"	68Ω	10%		021613
449	"	"	82Ω	"		021615

Symbol	Description				Remarks	Stock No.
R 450	Carbon	1/4 W	220Ω	5%		021501
451	"	"	68Ω	10%		021613
452	"	"	4700Ω	"		021637
453	"	"	10kΩ	"		021641
454	"	"	4700Ω	"		021637
455	"	"	39kΩ	"		021648
456	"	"	10kΩ	"		021641
457	"	"	820Ω	"		021628
458	"	"	100Ω	"		021616
459	"	"	2200Ω	"		021633
460	"	"	220Ω	"		021620
461	"	"	680Ω	"		021627
462	"	"	220Ω	5%		021501
463	"	"	1000Ω	10%		021629
464	"	"	10kΩ	"		021641
465	"	"	1000Ω	"		021629
466	"	"	4700Ω	"		021637
467	"	"	47kΩ	"		021649
468	"	"	1000Ω	"		021629
469	"	"	68Ω	"		021613
470	"	"	"	"		"
471	"	"	10kΩ	"		021641
472	"	"	4700Ω	"		021637
473	"	"	3000Ω	"		021683
474	"	"	100kΩ	"		021653
475	"	1/2 W	220Ω	"		022520
VR 401	Var Carbon		200Ω	B		020158
402	"		1000Ω	"		020160
	Capacitors					
C 401	Ceramic	25 WV	0.01μF			036112
402	"	"	0.1μF			036113
403	"	"	"			"
404	"	"	0.01μF			036112
405	"	"	"			"
406	"	"	"			"
407	"	"	0.1μF			036113
408	"	"	0.01μF			036112
409	"	"	"			"
410	"	"	0.1μF			036113
411	"	"	"			"
412	"	"	0.01μF			036112
413	"	"	"			"
414	Not Used					
415	Ceramic	25 WV	0.1μF			036113

Symbol	Description			Remarks	Stock No.
C 416	Ceramic	25 WV	0.01μF		036112
417	"	"	"		"
418	"	"	0.1μF		036113
419	"	"	"		"
420	"	"	0.01μF		036112
421	"	"	"		"
422	"	"	0.1μF		036113
423	"	"	0.01μF		036112
424	"	"	"		"
425	Not Used				
426	Ceramic	25 WV	0.1μF		036113
427	Mica	500 WV	56pF		035108
428	"	"	"		"
429	Elyc	15 V	200μF		031116
430	"	6 V	100μF		031102
431	Ceramic	25 WV	0.1μF		036113
432	Mica	500 WV	85pF		035109
433	"	"	100pF		035112
434	"	"	"		"
435	"	"	85pF		035109
436	Elyc	15 V	100μF		031115
437	"	6 V	30μF		031101
438	"	15 V	10μF		031112
439	Mica	500 WV	200pF		035111
440	Not Used				
441	Elyc	6 V	500μF		031104
442	"	25 V	3μF		031119
443	"	15 V	10μF		031112
444	"	25 V	3μF		031119
445	"	15 V	500μF		031117
446	"	"	100μF		031115
TC 401	Trimmer	1T20S	20pF max.		030102
	Inductors				
L 401		15μH	10%		017215
402		106μH	"		017206
403		15μH	"		017215
404		27μH	"		017202



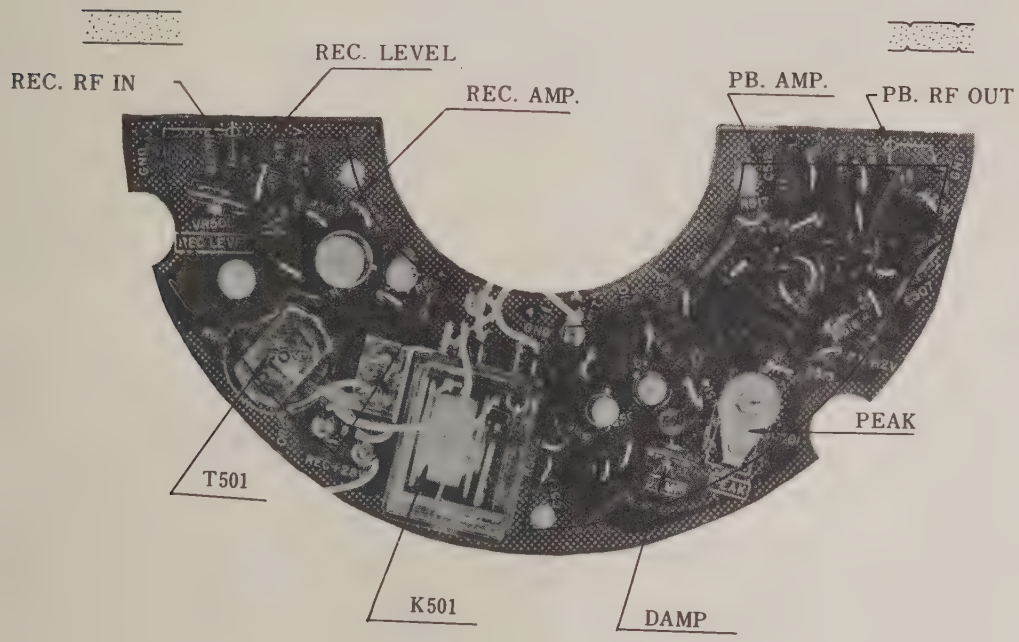
Notes:

1. Unless otherwise specified
   (1) All resistors are in ohms 1/4W ±10%, K=1000 ohms
   (2) All capacitors are in Microfarads (μF)
   (3) All wire diameters are 0.3 mm
2. Shield wires
   — 1 conductor
   — 2 conductors
3. ⊣⊢ indicates electrolytic capacitors M/50V
4. In case of SV-700UB the yellow cable from 1A 501 is connected to ⑦
   In 50 Hz Cout (MP) is 4 μF
   In 60 Hz Cout (MP) is 3.3 μF

Legend
1. CM Capstan Motor
2. DM Disc Motor
3. FM Fan Motor

MODEL SV-700UC(US),EC(ES)
DEMODULATOR
SCHEMATIC DIAGRAM

SV-700UC(US),EC(ES) VIDEO HEAD AMP



VIDEO HEAD AMP WAVEFORMS

501

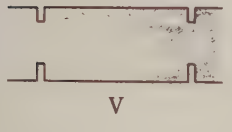
1.45Vp-p

502

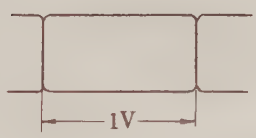
0.3Vp-p

503

1.1Vp-p

504 

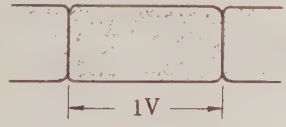
18Vp-p

505 

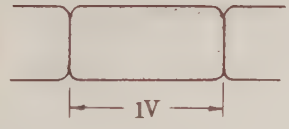
0.025Vp-p

506

0.05Vp-p

507 

1.5±0.6 Vp-p

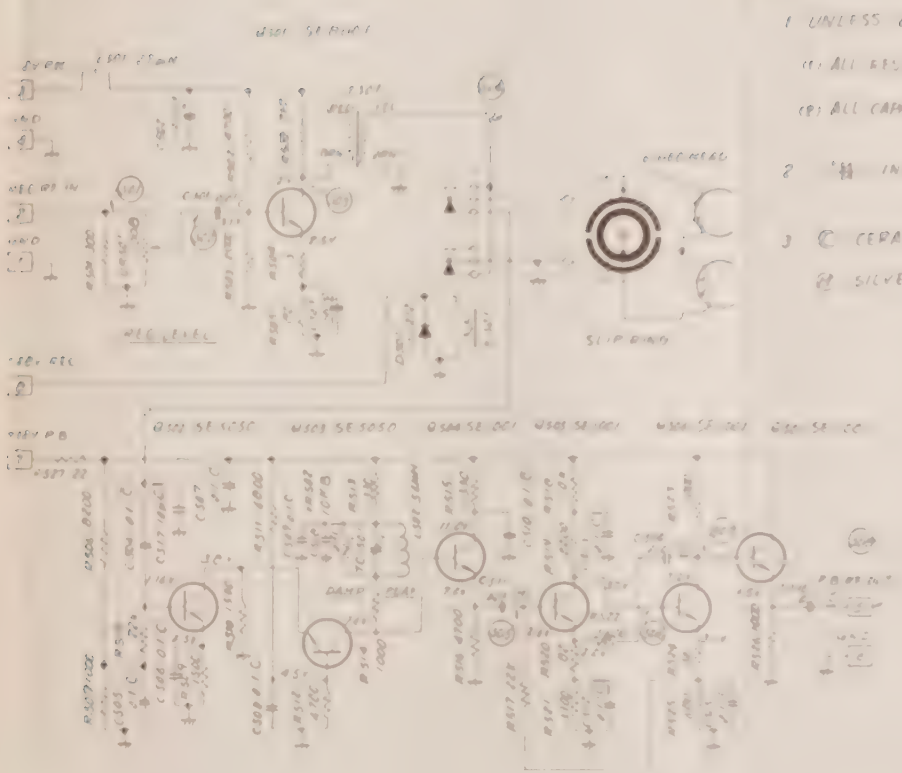
508 

1.5±0.6 Vp-p

VIDEO HEAD AMP

Symbol	Description				Remarks	Stock No.
	Transistors					
Q 501	SE8001					011609
502	SE5050					011611
503	"					"
504	SE1001					011601
505	"					"
506	"					"
507	"					"
	Diodes					
D 501	1S1212					012103
	Resistors					
R 501	Carbon	1/4 W	300Ω	10%		021678
502	"	"	4700Ω	"		021637
503	"	"	2000Ω	"		021682
504	"	"	5Ω	"		021674
505	"	"	82Ω	"		021615
506	"	"	8200Ω	"		021640
507	"	"	1000Ω	"		021629
508	"	"	22kΩ	"		021645
509	"	"	1500Ω	"		021631
510	"	"	"	"		"
511	"	"	6800Ω	"		021639
512	"	"	4700Ω	"		021637
513	"	"	330Ω	"		021622
514	"	"	1000Ω	"		021629
515	"	"	330Ω	"		021622
516	"	"	4700Ω	"		021637
517	"	"	22kΩ	"		021645
518	"	"	10kΩ	"		021641
519	"	"	2200Ω	"		021633
520	"	"	82Ω	"		021615
521	"	"	3300Ω	"		021635
522	"	"	5600Ω	"		021638
523	"	"	1000Ω	"		021629
524	"	"	56Ω	"		021612
525	"	"	680Ω	"		021627
526	"	"	1000Ω	"		021629
527	"	"	22Ω	"		021607
528	"	"	750Ω	"		021681
VR 501	Var Carbon		100Ω	B		020102
502	"		10kΩ	"		020101

Symbol	Description			Remarks	Stock No.
	Capacitors				
C 501	Ceramic	25 WV	0.01μF		036112
502	Elyc	15 V	10μF		031112
503	"	10 V	"		031105
504	Ceramic	25 WV	0.1μF		036113
505	"	"	"		"
506	"	"	"		"
507	"	"	"		"
508	"	"	"		"
509	"	"	"		"
510	"	"	"		"
511	Mica	500 WV	100pF		035101
512	Ceramic	25 WV	0.1μF		036113
513	"	"	"		"
514	"	"	0.01μF		036112
515	"	"	0.1μF		036113
516	"	"	"		"
517	"	50 WV	10pF		037117
518	"	25 WV	0.1μF		036113
TC 501	Trimmer	1T20S	20pF max.		030102
	Inductors				
L 501		27μH	10%		017202
502		56μH	"		017204
K 501	Relay	FA6-0R2			040102
T 501	Transformer, Output		RT-71		017107



NOTE:

1 UNLESS OTHERWISE SPECIFIED

(1) ALL RESISTORS ARE IN OHMS ¼W ±10% K=1000 OHMS

(2) ALL CAPACITORS ARE IN MICROFARADS

2 '#' INDICATES ELECTROLYTIC CAPACITOR μF/WV

3 C CERAMIC

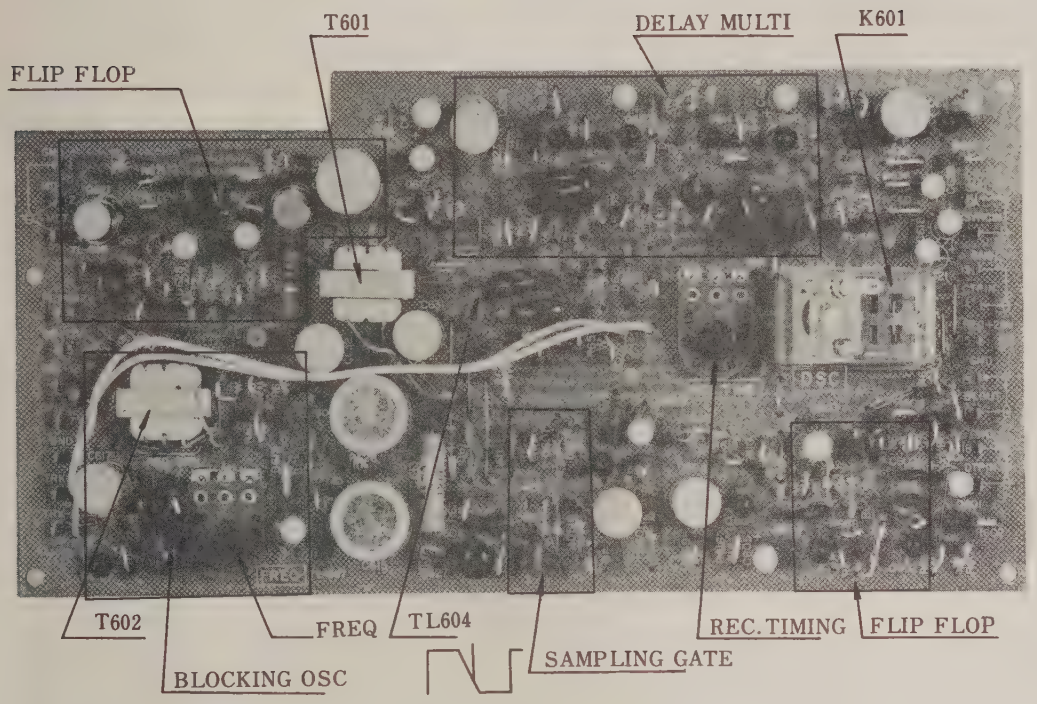
S SILVERED MICA

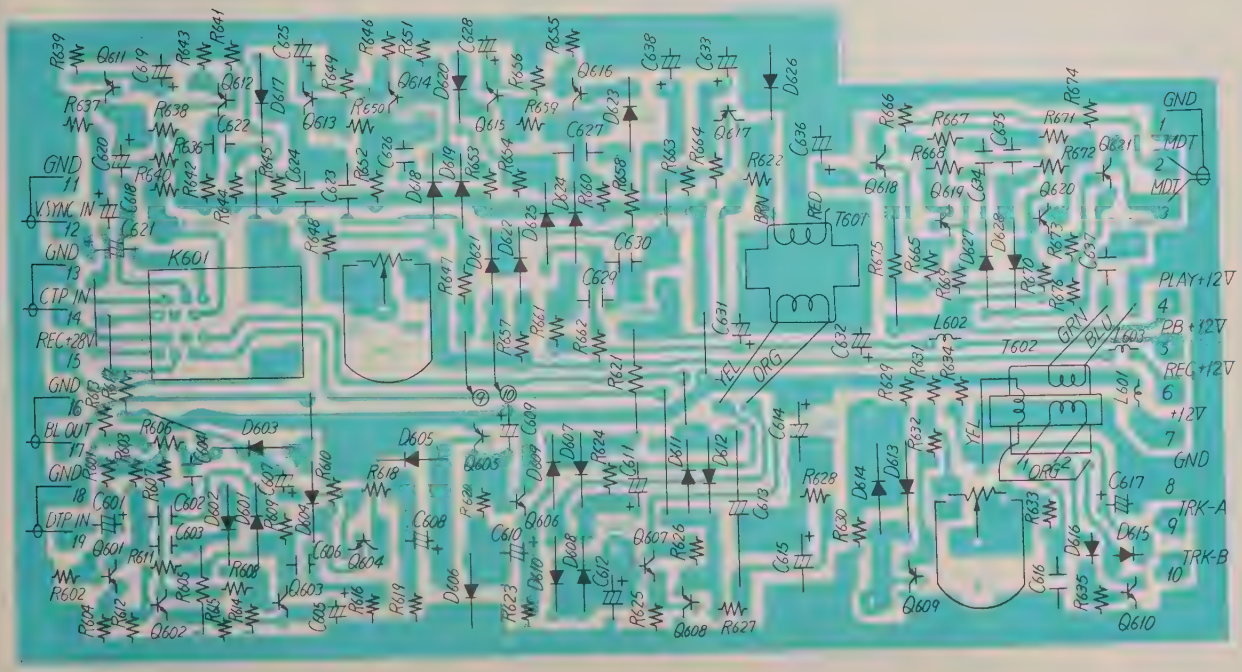
MODEL SV-700UC(US),EC(ES)

VIDEO HEAD AMP

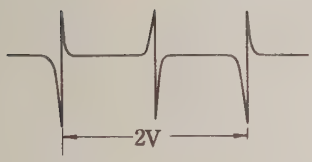
SCHEMATIC DIAGRAM

SV-700UC(US),EC(ES) DISC SERVO CONTROL

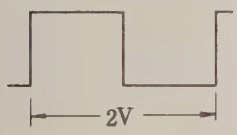




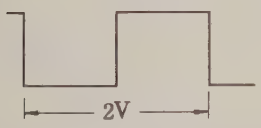
DISC SERVO CONTROL WAVEFORMS

601 

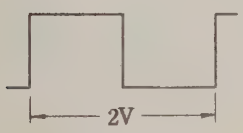
3.4 V p-p

602 

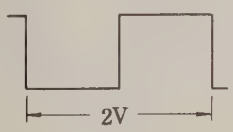
7.6 V p-p

603 

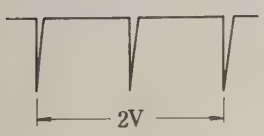
2.2 V p-p

604 

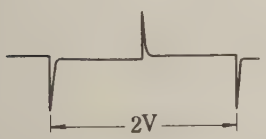
2.2 V p-p

605 

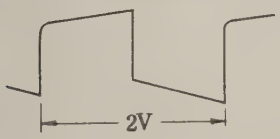
7.6 V p-p

606 

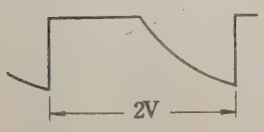
7.2 V p-p

607 

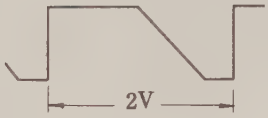
11.6 V p-p

608 

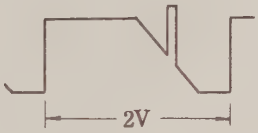
1.8 V p-p

609 

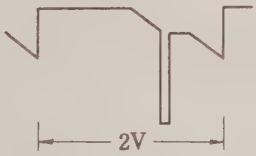
2 0 V p-p

610 

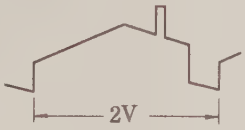
1 2 V p-p

611 

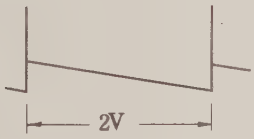
8.2 V p-p

612 

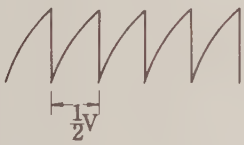
7.6 V p-p

613 

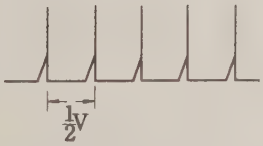
6.4 V p-p

614 

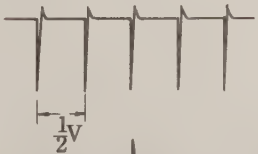
0.1 6 V p-p

615 

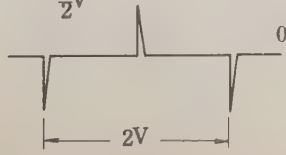
1 2.5 V p - p

616 

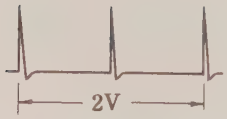
1.2 V p-p

617 

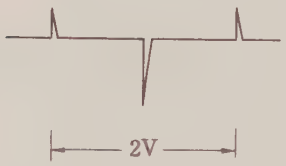
1 2.5 V p-p

618 

0.0 2 V p-p

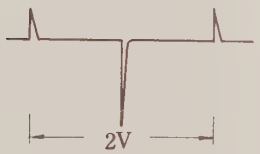
(619) 

0.48Vp-p

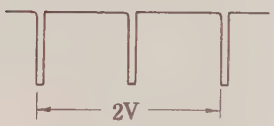
(620) 

2.1Vp-p

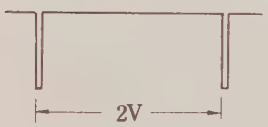
(621) REC
0.5Vp-p

(621) P.B 

2.1Vp-p

(622) REC 

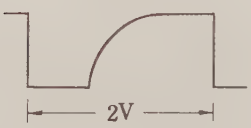
1.2Vp-p

(622) P.B 

1.2Vp-p

(623) REC

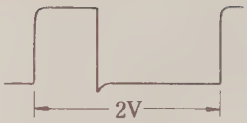
1.0Vp-p

(623) P.B 

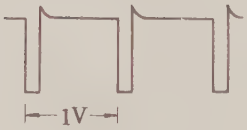
1.0Vp-p

(624) REC

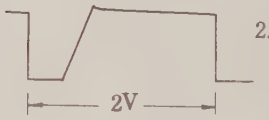
1.5Vp-p

(624) P.B 

1.5Vp-p

(625) REC 

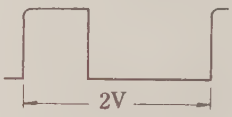
2.8Vp-p

(625) P.B 

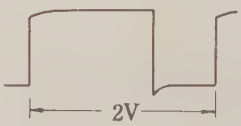
2.8Vp-p

(626) REC

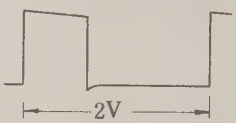
8.4Vp-p

(626) P.B 

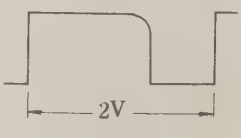
8.4Vp-p

(627) REC 

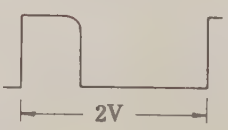
1.7Vp-p

(627) P.B 

1.7Vp-p

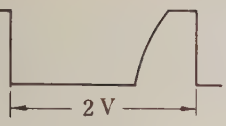
(628) REC 

8.5Vp-p

(628) P.B 

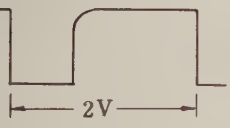
8.5Vp-p

(629) REC



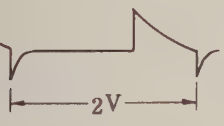
10 Vp-p

(629) P.B



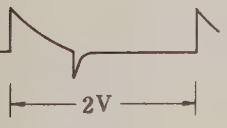
10 Vp-p

(630) REC



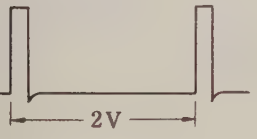
2.8 Vp-p

(630) P.B



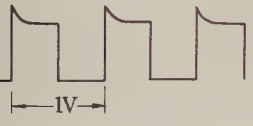
2.8 Vp-p

(631)



12.5 Vp-p

(632)



3.4 Vp-p

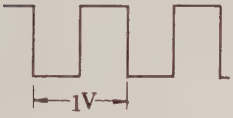
(623)

3.4 Vp-p

(624)

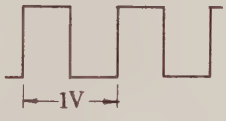
7.4 Vp-p

(635)



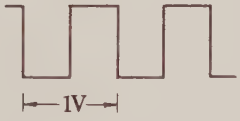
0.7 Vp-p

(636)



1.7 Vp-p

(637)



1.7 Vp-p

DISC SERVO CONTROL

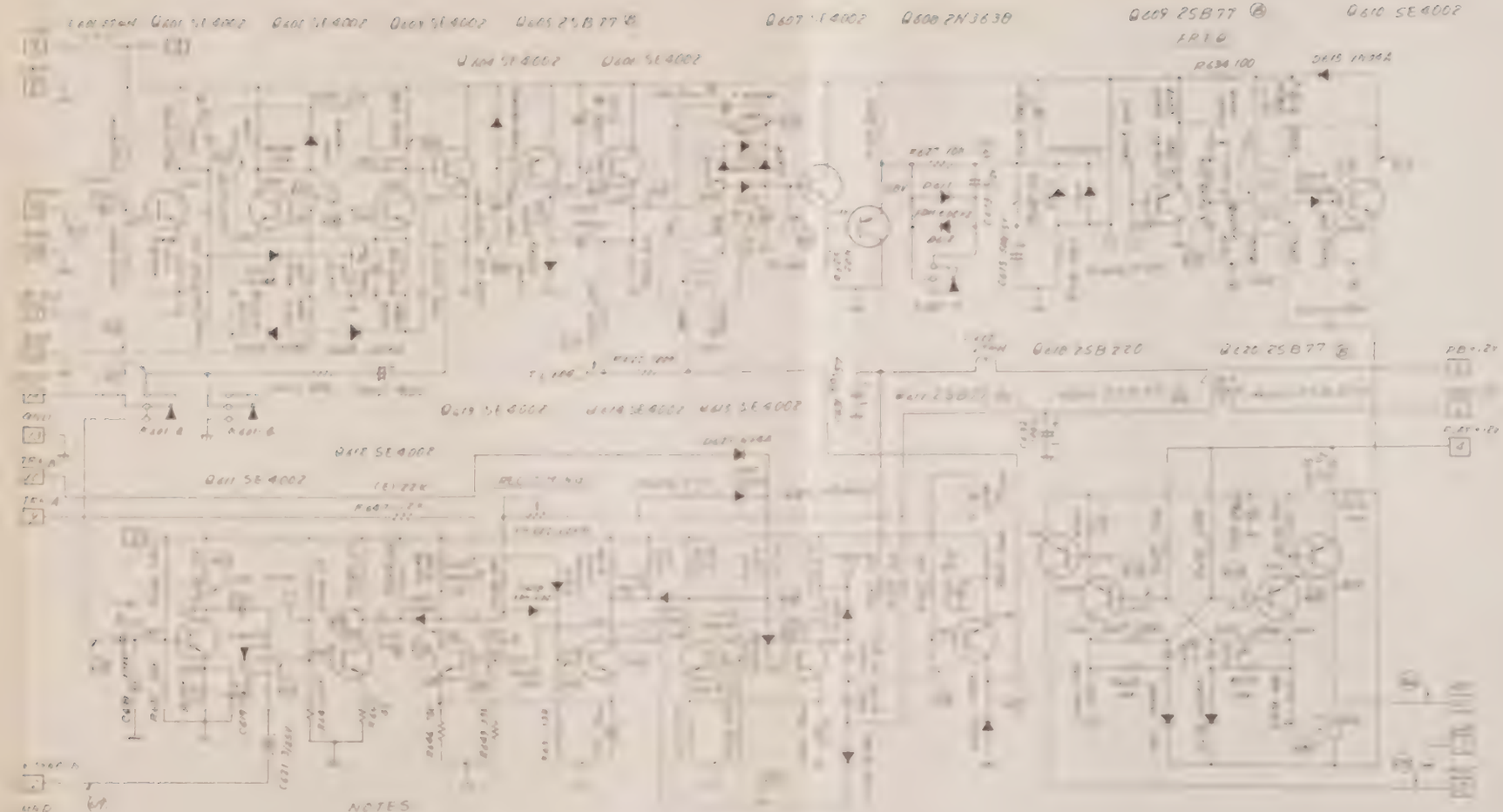
Symbol	Description	Remarks	Stock No.
	Transistors		
Q 601	SE4002		011603
602	"		"
603	"		"
604	"		"
605	2SB77 (B)		011201
606	SE4002		011603
607	"		"
608	2N3638		011503
609	2SB77 (B)		011201
610	SE4002		011603
611	"		"
612	"		"
613	"		"
614	"		"
615	"		"
616	"		"
617	2SB77 (B)		011201
618	2SB220		011202
619	2SB77 (B)		011201
620	"		"
621	2SB220		011202
	Diodes		
D 601	1N34A		012104
602	"		"
603	"		"
604	"		"
605	"		"
606	"		"
607	FDH600		012126
608	"		"
609	"		"
610	"		"
611	"		"
612	"		"
613	"		"
614	"		"
615	1N34A		012104
616	FDH600		012126
617	1N34A		012104
618	FDH600		012126
619	"		"
620	1N34A		012104
621	"		"

Symbol		Description				Remarks	Stock No.
D	622	1N34A					012104
	623	FDH600					012126
	624	1N34A					012104
	625	"					"
	626	"					"
	627	"					"
	628	"					"
		Resistors					
R	601	Carbon	1/4 W	47kΩ	10%		021649
	602	"	"	4700Ω	"		021637
	603	"	"	5100Ω	"		021685
	604	"	"	510Ω	"		021679
	605	"	"	22kΩ	"		021645
	606	"	"	100kΩ	"		021653
	607	"	"	2200Ω	"		021633
	608	"	"	15kΩ	"		021643
	609	"	"	22kΩ	"		021645
	610	"	"	2200Ω	"		021633
	611	"	"	15kΩ	"		021643
	612	"	"	"	"		"
	613	"	"	100kΩ	"		021653
	614	"	"	15kΩ	"		021643
	615	"	"	750Ω	"		021681
	616	"	"	100kΩ	"		021653
	617	"	"	5100Ω	"		021685
	618	"	"	470Ω	"		021624
	619	"	"	510Ω	"		021679
	620	"	"	5100Ω	"		021685
	621	"	"	68kΩ	"		021651
	622	"	"	100kΩ	"		021653
	623	"	"	510Ω	"		021679
	624	"	"	100kΩ	"		021653
	625	"	"	20kΩ	"		021688
	626	"	"	2200Ω	"		021633
	627	"	"	10kΩ	"		021641
	628	"	"	510Ω	"		021679
	629	"	"	330Ω	5%		021503
	630	"	"	"	"		"
	631	"	"	2200Ω	10%		021633
	632	"	"	1000Ω	"		021629
	633	"	"	12kΩ	"	UC,US	021642
				15kΩ	"	EC,ES	021643
	634	"	"	100Ω	"		021616
	635	"	"	10kΩ	"		021641

Symbol	Description				Remarks	Stock No.
R 636	Carbon	1/4 W	220kΩ	10%		021657
637	"	"	20kΩ	"		021688
638	"	"	12kΩ	"		021642
639	"	"	510Ω	"		021679
640	"	"	1MΩ	"		021665
641	"	"	33kΩ	"		021647
642	"	"	10kΩ	"		021641
643	"	"	56Ω	"		021612
644	"	"	22kΩ	"		021645
645	"	"	4700Ω	"		021637
646	"	"	750Ω	"		021681
647	"	"	12kΩ	"	UC,US	021642
			22kΩ	"	EC,ES	021645
648	"	"	10kΩ	"		021641
649	"	"	33kΩ	"		021647
650	"	"	22kΩ	"		021645
651	"	"	33kΩ	"		021647
652	"	"	4700Ω	"		021637
653	"	"	22kΩ	"		021645
654	"	"	4700Ω	"		021637
655	"	"	750Ω	"		021681
656	"	"	33kΩ	"		021647
657	"	"	47kΩ	"		021649
658	"	"	12kΩ	"	UC,US	021642
			22kΩ	"	EC,ES	021645
659	"	"	22kΩ	"		021645
660	"	"	4700Ω	"		021637
661	"	"	22kΩ	"		021645
662	"	"	"	"		"
663	"	"	10kΩ	"		021641
664	"	"	1000Ω	"		021629
665	"	"	220Ω	"		021620
666	"	"	680Ω	"		021627
667	"	"	6800Ω	"		021639
668	"	"	10kΩ	"		021641
669	"	"	3300Ω	"		021635
670	"	"	"	"		"
671	"	"	6800Ω	"		021639
672	"	"	10kΩ	"		021641
673	"	"	220Ω	"		021620
674	"	"	680Ω	"		021627
675	"	1/2 W	10Ω	"		022503
676	"	1/4 W	10kΩ	"		021641

Symbol	Description			Remarks	Stock No.
VR 601	Var Carbon		10kΩ B		020112
602	"		60kΩ B		020113
	Capacitors				
C 601	Elyc	25 V	3μF		031119
602	Polyester	50 WV	0.01μF		034108
603	"	"	"		"
604	"	"	0.022μF		034110
605	Elyc	10 V	10μF		031105
606	Polyester	50 WV	0.022μF		034110
607	Elyc	15 V	10μF		031112
608	"	"	100μF		031115
609	Alumi Solid Elyc	"	1μF		031301
610	Elyc	"	100μF		031115
611	Alumi Solid Elyc	"	1μF		031301
612	"	"	"		"
613	Elyc	12 V	15μF	Non-polarity	031206
614	"	15 V	500μF		031117
615	"	"	"		"
616	Polyester	35 WV	0.47μF		034201
617	Elyc	15 V	100μF		031115
618	"	25 V	3μF		031119
619	"	15 V	100μF		031115
620	"	25 V	3μF		031119
621	"	"	"		"
622	Polyester	50 WV	0.01μF		034108
623	"	35 WV	0.47μF		034201
624	"	50 WV	0.1μF		034206
625	Elyc	10 V	10μF		031105
626	Polyester	50 WV	0.01μF		034108
627	"	35 WV	0.47μF		034201
628	Elyc	10 V	10μF		031105
629	Polyester	50 WV	0.1μF		034115
630	"	"	"		"
631	Elyc	15 V	100μF		031115
632	"	"	"		"
633	"	"	10μF		031112
634	Polyester	50 WV	0.1μF		034115
635	"	"	"		"
636	Elyc	15 V	200μF		031116
637	Polyester	50 WV	0.1μF		034115
638	Elyc	15 V	100μF		031115
639	Polyester	50 WV	0.0047μF		034105

Symbol	Description			Remarks	Stock No.
	Inductors				
L 601		27μH	10%		017202
602		"	"		"
603		"	"		"
K 601	Relay	AM-79031			040101
	Transformers				
T 601	Pulse	PG-71			017105
602	Blocking	VB-71			017101



NOTES

1 UNLESS OTHERWISE SPECIFIED:

(1) ALL RESISTORS ARE IN OHMS, ¼W, ± 10%

K = 1000 OHMS

(2) ALL CAPACITORS ARE IN MICROFARADS (μF)

2 ⏚ INDICATES ELECTROLYTIC CAPACITOR μF/WV

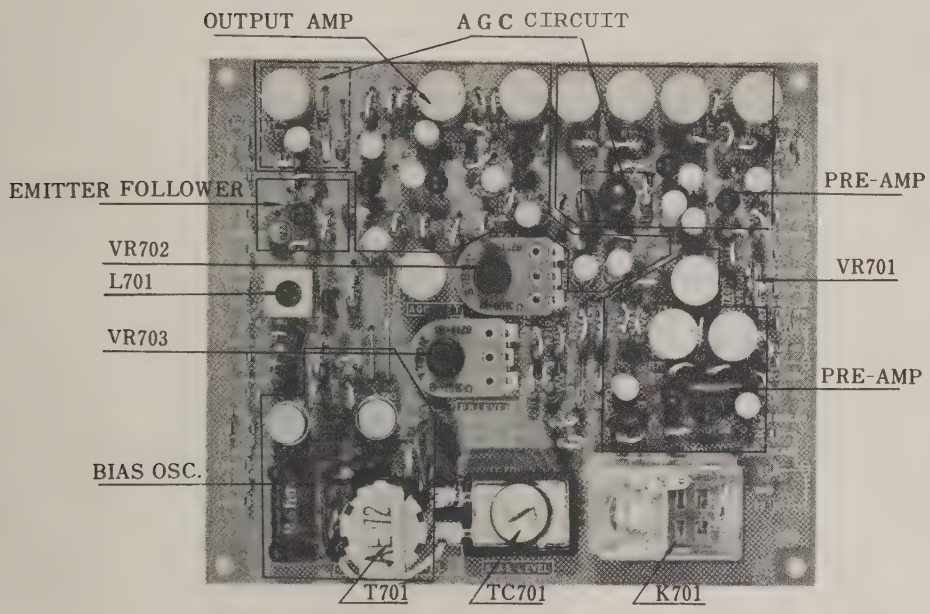
3 (S) SOLID ELECTROLYTE ALUMINUM

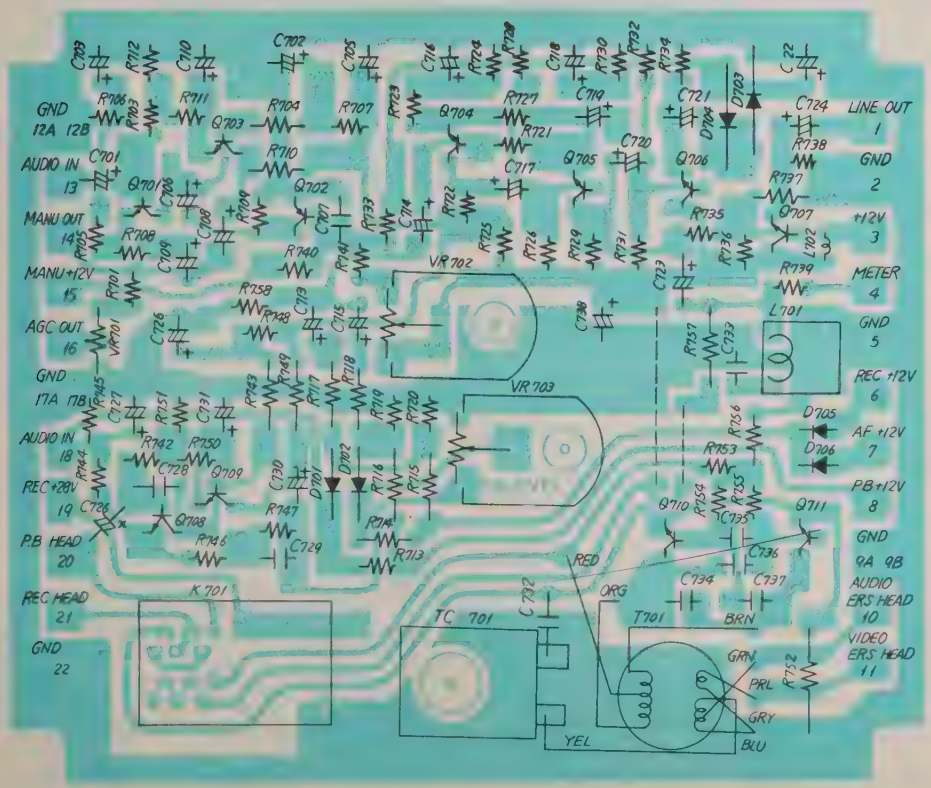
(C) CERAMIC

(M) MYLER FILM

MODEL SV-700UC(US),EC(ES)
DISC SERVO CONTROL
SCHEMATIC DIAGRAM

SV-700UC(US),EC(ES) AUDIO





AUDIO AND AUDIO ERASE WAVEFORMS

701

0.004Vp-p

702

0.003Vp-p

703

0.3Vp-p

704

0.02Vp-p

705

1.6Vp-p

706

0.44Vp-p

707

55Vp-p

708

0.0045Vp-p

709

0.002Vp-p

710

0.15Vp-p

711
~
712

25Vp-p

713
~
714

5.4Vp-p

715

50Vp-p

716

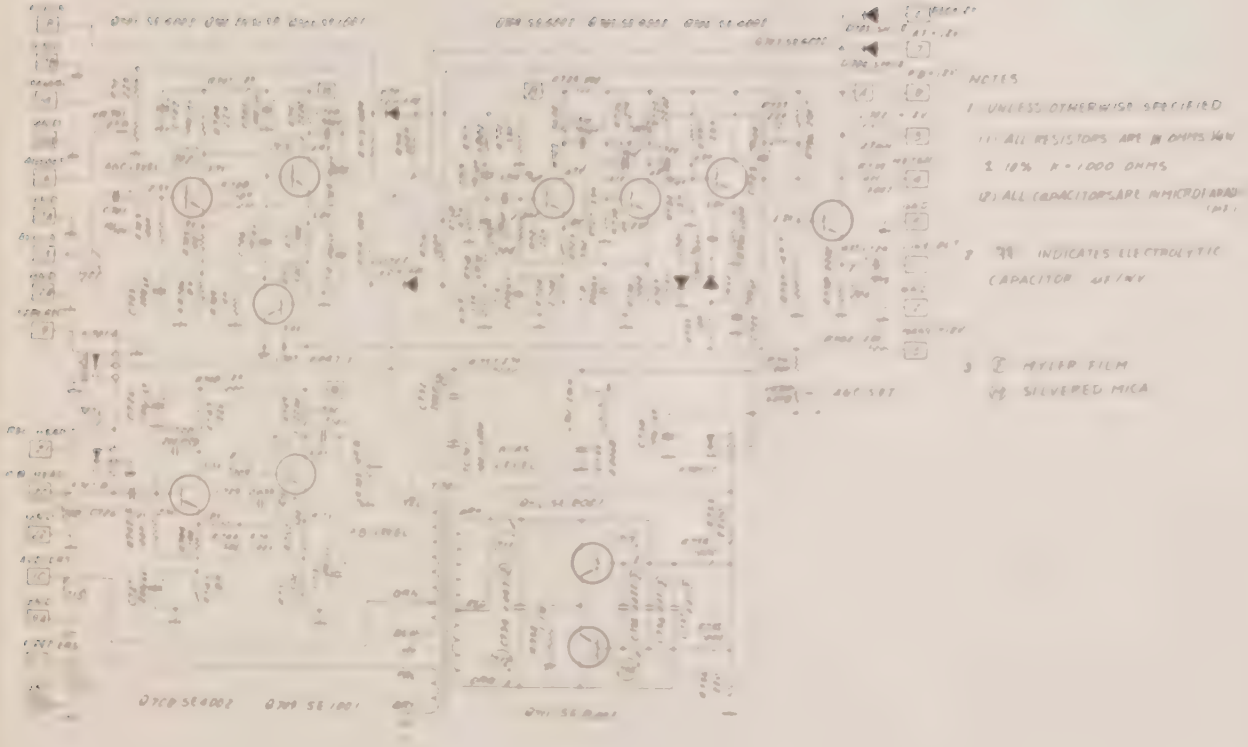
32Vp-p

AUDIO

Symbol	Description				Remarks	Stock No.
	Transistors					
Q 701	SE4002					011603
702	2N3638					011503
703	SE1001					011601
704	SE4002					011603
705	"					"
706	"					"
707	"					"
708	"					"
709	SE1001					011601
710	SE8001					011609
711	"					"
	Diodes					
D 701	FDH600					012126
702	"					"
703	1N60					012105
704	"					"
705	SH-1Z					012112
706	"					"
	Resistors					
R 701	Carbon	1/4 W	22kΩ	10%		021645
702	Not Used					
703	Carbon	1/4 W	100kΩ	10%		021653
704	"	"	22kΩ	"		021645
705	"	"	100Ω	"		021616
706	"	"	18kΩ	"		021644
707	"	"	12KΩ	"		021642
708	"	"	10kΩ	"		021641
709	"	"	"	"		"
710	"	"	2200Ω	"		021633
711	"	"	1500Ω	"		021631
712	"	"	"	"		"
713	"	"	100kΩ	"		021653
714	"	"	"	"		"
715	"	"	"	"		"
716	"	"	"	"		"
717	"	"	6800Ω	"		021639
718	"	"	"	"		"
719	"	"	33kΩ	"		021647
720	"	"	"	"		"
721	"	"	22kΩ	"		021645

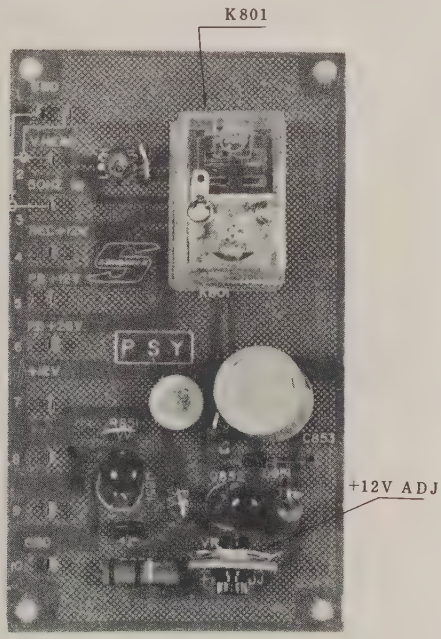
Symbol	Description				Remarks	Stock No.
R 722	Carbon	1/4 W	5600Ω	10%		021638
723	"	"	330Ω	"		021622
724	"	"	2700Ω	"		021634
725	"	"	390Ω	"		021623
726	"	"	27kΩ	"		021646
727	"	"	33kΩ	"		021647
728	"	"	10kΩ	"		021641
729	"	"	2200Ω	"		021633
730	"	"	1000Ω	"		021629
731	"	"	22kΩ	"		021645
732	"	"	15kΩ	"		021643
733	"	"	10kΩ	"		021641
734	"	"	2200Ω	"		021633
735	"	"	22kΩ	5%		021511
736	"	"	"	"		"
737	"	"	15kΩ	"		021510
738	"	"	2200Ω	10%		021633
739	"	"	1000Ω	5%		021504
740	"	"	22kΩ	10%		021645
741	"	"	100kΩ	"		021653
742	"	"	"	"		"
743	"	"	22kΩ	"		021645
744	"	"	100Ω	"		021616
745	"	"	18kΩ	"		021644
746	"	"	1500Ω	"		021631
747	"	"	100kΩ	"		021653
748	"	"	12kΩ	"		021642
749	"	"	2200Ω	"		021633
750	"	"	1500Ω	"		021631
751	"	"	"	"		"
752	Wire Wound	1 W	. 1Ω	"		025102
753	Carbon	1/4 W	2200Ω	"		021633
754	"	"	1000Ω	"		021629
755	"	"	"	"		"
756	"	"	220Ω	"		021620
757	"	"	27kΩ	"		021646
758	"	"	47kΩ	"		021649
VR 701	Var Carbon		10kΩ	B		020156
702	"		60kΩ	"		020113
703	"		10kΩ	"		020112

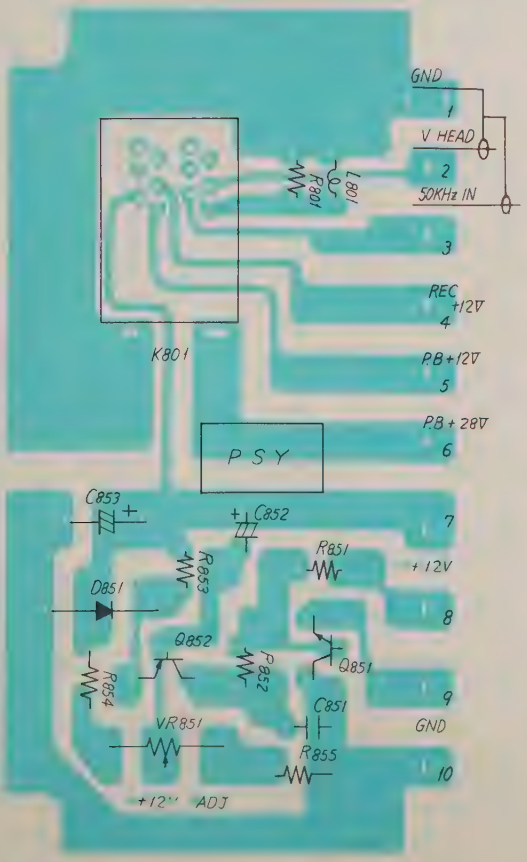
Symbol	Description			Remarks	Stock No.
	Capacitors				
C 701	Elyc	10 V	10μF		031105
702	"	15 V	100μF		031115
703	"	6 V	200μF		031103
704	Not Used				
705	Elyc	15 V	100μF		031115
706	"	10 V	10μF		031105
707	Polyester	50 WV	0.047μF		034112
708	Elyc	10 V	10μF		031105
709	"	"	"		"
710	"	15 V	100μF		031115
711	Not Used				
712	"				
713	Elyc	10 V	10μF		031105
714	"	"	"		"
715	"	"	"		"
716	"	6 V	200μF		031103
717	"	10 V	10μF		031105
718	"	6 V	200μF		031103
719	"	10 V	10μF		031105
720	"	"	"		"
721	"	25 V	3μF		031119
722	"	6 V	200μF		031103
723	"	10 V	10μF		031105
724	"	"	"		"
725	"	15 V	100μF		031115
726	"	10 V	10μF		031105
727	"	6 V	200μF		031103
728	Mica	500 WV	200pF		035102
729	Polyester	50 WV	0.033μF		034203
730	Elyc	10 V	10μF		031105
731	"	15 V	100μF		031115
732	Mica	500 WV	200pF		035102
733	Polyester	50 WV	0.0068μF		034106
734	"	"	0.047μF		034204
735	"	"	0.022μF		034110
736	"	"	0.01μF		034108
737	"	"	"		"
738	Elyc	15 V	100μF		031115
TC 701	Padding	PC-PA	100-600pF		030101
	Inductors				
L 701	Audio Bias Trap STB				017104
702			27μH 10%		017202
T 701	Transformer, Audio Oscillator			AE-72	017109
K 701	Relay	AM-79031			040101


NOTES
1. UNLESS OTHERWISE SPECIFIED
(1) ALL RESISTORS ARE IN OHMS 1/4W
± 10% K = 1,000 OHMS
(2) ALL CAPACITORS ARE IN MICRO FARAD (μF).
3. ▽ INDICATES ELECTROLYTIC CAPACITOR 16V/1KV
▽ MYLER FILM
▽ SILVERED MICA

MODEL SV-700UC(US),EC(ES)
AUDIO SCHEMATIC DIAGRAM

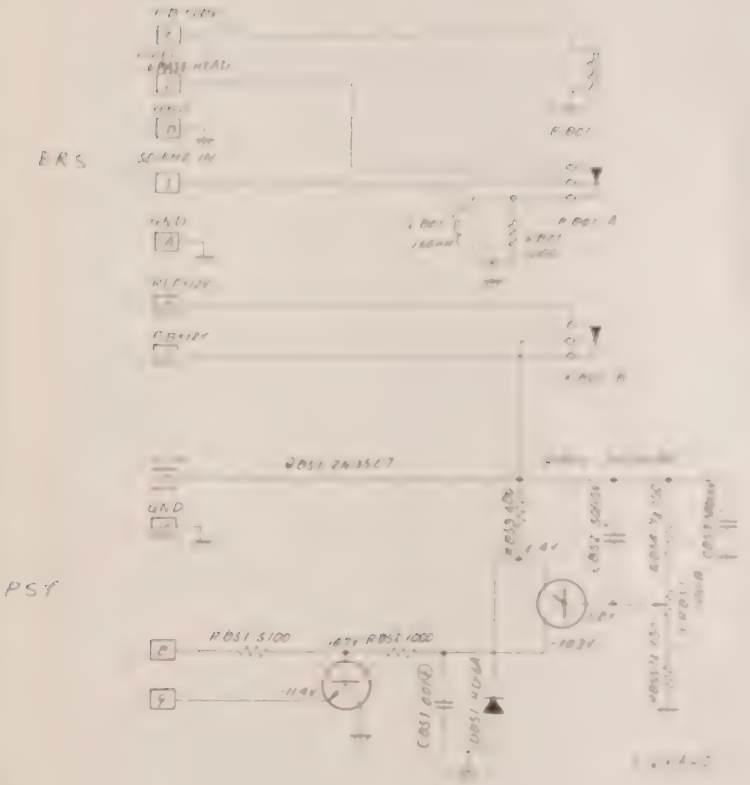
SV-700UC(US),EC(ES) POWER SUPPLY & ERASE POWER SUPPLY





POWER SUPPLY & ERASE POWER SUPPLY

Symbol	Description				Remarks	Stock No.
	Transistors					
Q 851	2N3567					011501
852	2N3638					011503
	Diodes					
D 851	RD6A				Zener	012114
	Resistors					
R 801	Carbon	1/4 W	1000Ω	10%		021629
851	"	"	5100Ω	"		021685
852	"	"	1000Ω	"		021629
853	"	"	680Ω	"		021627
854	"	1/2 W	150Ω	"		022518
855	"	"	100Ω	"		022516
VR 851	Var Carbon		100Ω	B		020157
	Capacitors					
C 851	Polyester	50 WV	0.01μF			034108
852	Elyc	15 V	50μF			031114
853	"	"	500μF			031117
K 801	Relay	AM-79031				040101
L 801	Inductor		150μH	10%		017216



1. UNLESS OTHERWISE SPECIFIED
   (1) ALL RESISTORS ARE IN OHMS 1/4W
   ± 10% K = 1000 OHMS
   (2) ALL CAPACITORS ARE IN MICROFARADS (MF)
2. ⊕ INDICATES ELECTROLYTIC
   (CERAMIC OR MYLAR)
3. F MYLER FILM

MODEL SV-700UC(US),EC(ES)
ERASE POWER SUPPLY
SCHEMATIC DIAGRAM

TAPE DECK WAVEFORMS

001

003

002

004

TAPE DECK

Symbol	Description	Remarks	Stock No.
	Transistors		
Q 001	2SB425		011203
002	"		"
003	"		"
004	"		"
	Diodes		
D 001	SH-1Z		012112
002	"		"
003	"		"
004	"		"
TB 001	Terminal Board 3PX-P1205		044103
	Motors		
M 001	AC Servo L-38K	Servo	796029
002	Hysteresis Synchronous L-35E	Capstan	796028
	Resistors		
R 001	Carbon 1 W 2700Ω 10%		023105
002	" 1/2 W 22kΩ "		022545
TM 001	Timister OSC-4		013102
PL 001	Pilot Lamp RM-2181-2 (12V, 0.03A)		043109
	Switches		
SW 001	Pushbutton SW618-SV700-REC		741004
002	WD-144		741002
003	Micro AM7790 UL	UC,EC	741005
	Actuator JW-1		
T 001	Drive Transformer MT-71		018101
CH 001	Choke Coil PC-71		019103
	Capacitors		
C 001			
A,B	MP 35μF 75V AC		733002
	+7μF "	EC,ES	733004
	30μF "	UC,US	733005
002	" 3.5μF+0.5μF 300V AC		733003
003			
A,B	Elyc 50 V 1000μFx2		032107
005	" 6 V 50μF		031202

Symbol	Description		Remarks	Stock No.
	Connectors			
CN 001a	Clock	CN4PAF		042109
001b	"	CN4PAM		042001
002a		S-I7509	UC,US	042121
002b		S-I7510	"	042120
003		S-I7509	"	042121

SV-700US(ES) TAPE DECK

Symbol	Description		Remarks	Stock No.
Q 005	Photo Transistor	FPT-100		011701
PL 002	Pilot Lamp	RM5-14V 75-E		765029
	Socket	E-5		042171
K 201	Relay	RAB-24D-11		040103
	Switches			
SW 004	Micro	AM76909 UL		741006
005	"	"		"
M 003	Slow Motor	EM-22		796070

B CHASSIS

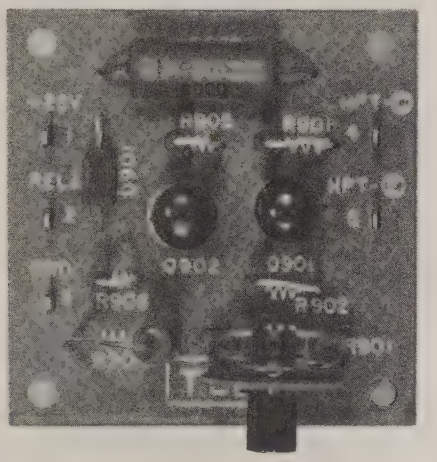
Symbol	Description		Remarks	Stock No.
	Transistors			
Q 201	2SC889			011312
	Diodes			
D 201	1S1850		EC,ES	012123
"	SD-2Z		UC,US	012115
202	1S1850R		EC,ES	012122
"	SD-2Z		UC,US	012115
203	1S1850		EC,ES	012123
"	SD-2Z		UC,US	012115
204	1S1850R		EC,ES	012122
"	SD-2Z		UC,US	012115
	Transformers			
T 201	Power	PT-74	UC,US	019115
"	"	PT-75	EC,ES	019127
	Resistors			
R 201	Carbon	1 W 2700Ω 10%		023105
202	"	" 100Ω "		023103
203	"	1/4 W 10kΩ "		021441
	Capacitors			
C 201	Elyc	35 V 4000μF		032106
M 201	Fan Motor	EM-16		014101
PL 201	Pilot Lamp	No. 1054 24V 0.1A		043103
	Lamp Socket	S-E0102		042110
ME 201	VU Meter	MK-23DCAVU		013101
	Fuses			
F 201		MF60 3A	UC,US	043101
	Holder	S-N1301	"	042135
201		S Type RT20 3A	EC,ES	043132
202		ASF3 3A	UC,US	043113
"		S Type PT20 1A	EC,ES	043130
203		" 3A	"	043132
204		" 1.6AT	"	043131

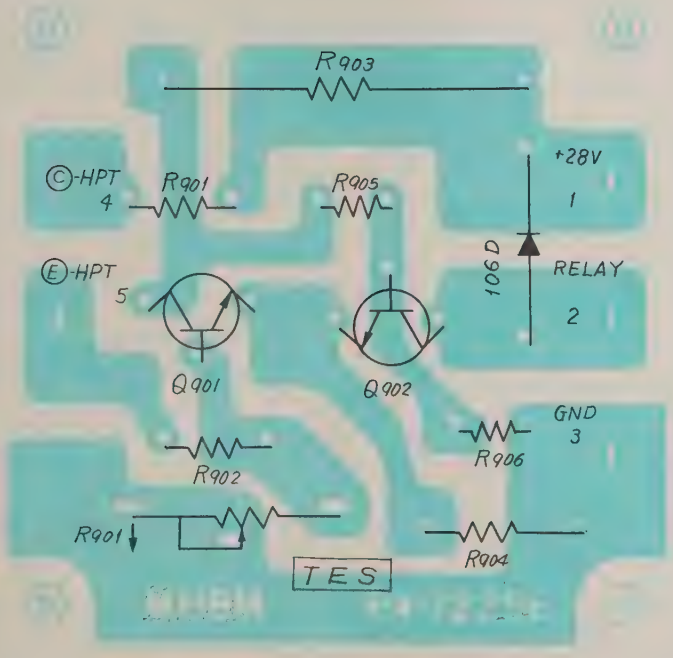
Symbol	Description			Remarks	Stock No.
	Switches				
SW 201	Pushbutton	White	UEH 12BF	UC,US	041123
"	"	"	S Type FPS-21	EC,ES	041127
202	"	Red	SW610		041104
203	Seesaw	SQ132	6-2-2		041102
	Connectors				
CN 201	AC Voltage Adjustment		PSW-1(J)	EC,ES	042169
"	Square		AC IN S-I6405	UC,US	042170
202	"		S-I9122	"	042140
203	"		"	"	"
	AC Cord		UL Type	"	015119
	"		S Type	EC,ES	015120
	Nylon Clip		HP-3N	"	044125
TB 201	Terminal Board		S-P1212		044101
202	"		"		"
203	"		T-3 No.3182	EC,ES	044123

A CHASSIS

Symbol	Description				Remarks	Stock No.
	Connectors					
CN 101	Square Shape	S-1308-SB				042176
102	UHF Type	IM-R-B				042111
103	U Type	S-I8113				042108
104	Not Used					
105	U Type	S-I8113			EC,ES	042108
106	"	"			"	"
J 101	Mini Jack	SV-46			UC,US	042105
102	"	"			"	"
	Switches					
SW 101a, b,c	Rotary	S18-162				041122
102	Slide	SL-8				041121
103	"	SL-13			EC,ES	041109
	Resistors					
R 101	Carbon	1/4 W	75Ω	10%		021614
102	"	"	10kΩ	"		021641
103	"	"	100Ω	"		021616
VR 101	Var Carbon		50kΩx2	B		020136
102-1	"		300Ω	"		020135
102-2	"		10kΩ	A		"
TB 101	Terminal Board	3PX-P1205				044103

SV-700US,ES TAPE END SWITCH



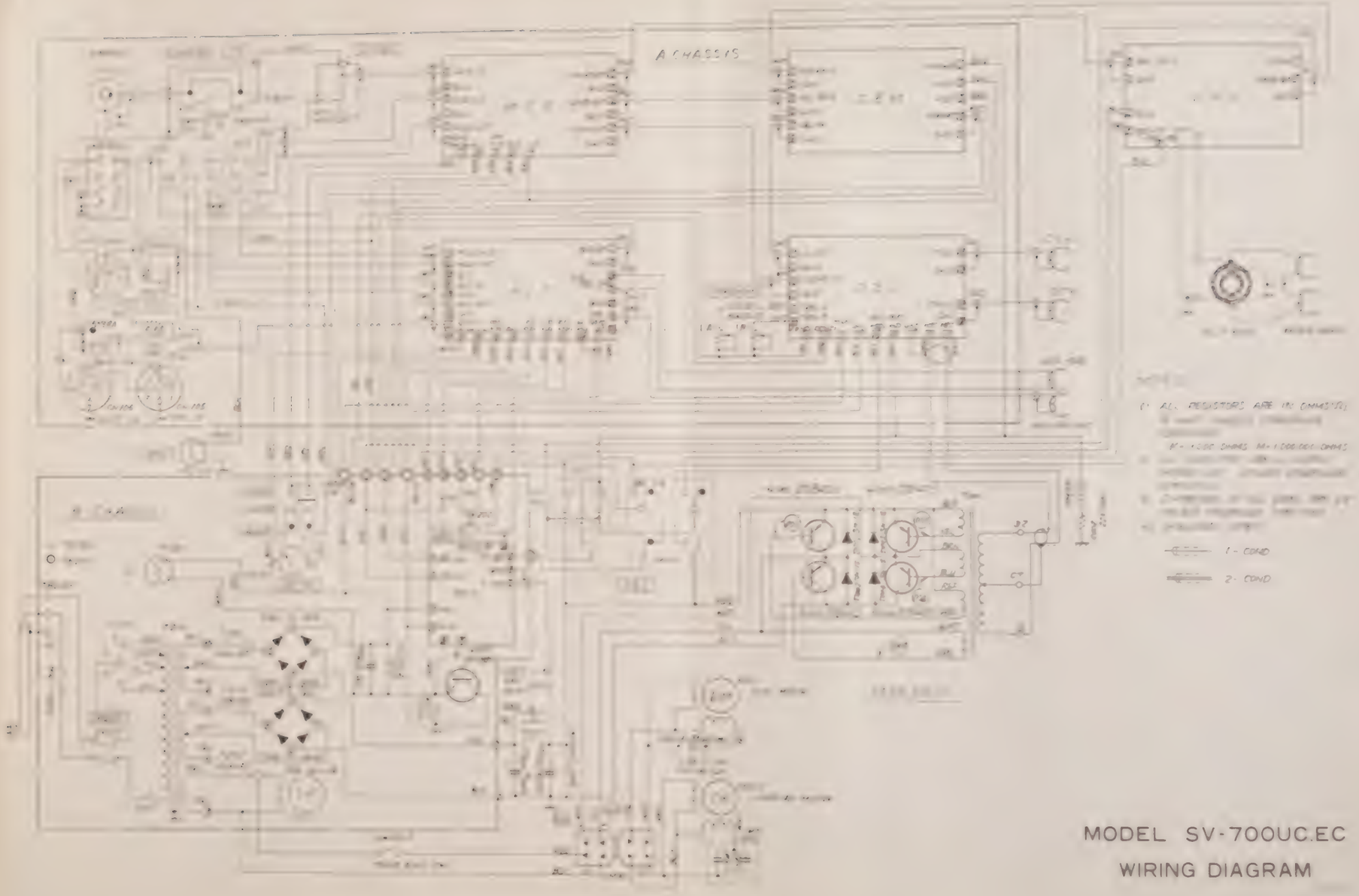


SV-700US,ES TAPE END SWITCH

Symbol	Description				Remarks	Stock No.
	Transistors					
Q 901	2N3643					011505
902	"					"
	Diodes					
D 901	SH-1Z					012112
	Resistors					
R 901	Carbon	1/4 W	2700Ω	10%		021634
902	"	"	10kΩ	"		021641
903	Metalized Carbon	2 W	680Ω	"		024113
904	Carbon	1/2 W	47Ω	"		022511
905	"	1/4 W	1000Ω	"		021629
906	"	"	3300Ω	"		021635

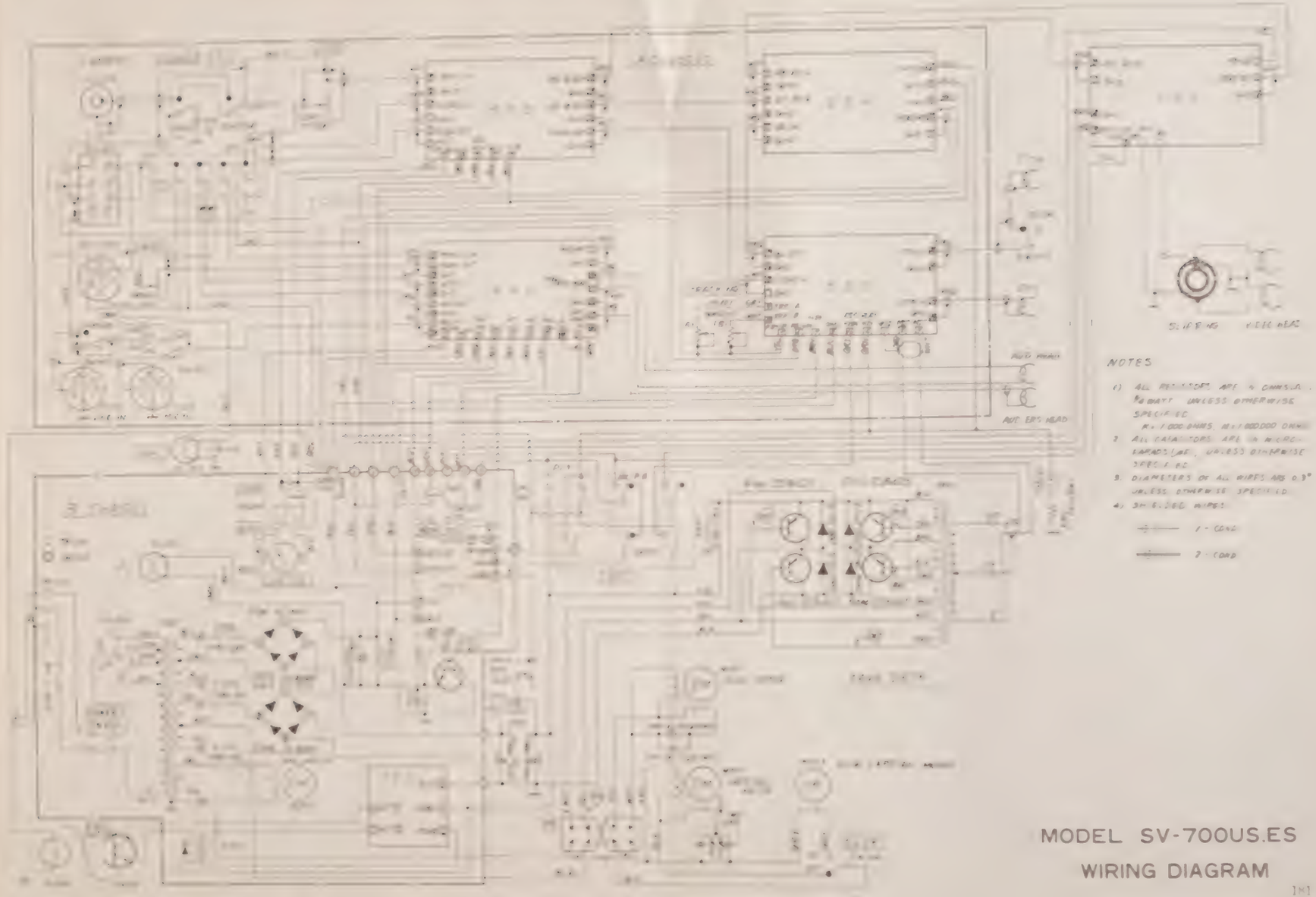
NOTES
ALL RESISTANCE VALUES ARE IN OHMS
K=1000
ALL RESISTORS ARE 1/4W K=10% TOLERANCE
EXCEPT AS INDICATED
ALL CAPACITANCE VALUES ARE IN μF
EXCEPT AS INDICATED
CAPACITORS
- ELECTROLYTIC μF/WV
- Ⓟ MYLER FILM
- Ⓜ SILVERED MICA

MODEL SV-700US,ES
TAPE END SWITCH
SCHEMATIC DIAGRAM



MODEL SV-700UC.EC

WIRING DIAGRAM


NOTES
1) ALL RESISTORS ARE ¼ OHMS/1/4 WATT UNLESS OTHERWISE SPECIFIED.
2) ALL CAPACITORS ARE IN MICROFARADS (μF), UNLESS OTHERWISE SPECIFIED.
3) DIAMETERS OF ALL WIRES ARE 0.3 UNLESS OTHERWISE SPECIFIED.
4) SHIELDED WIRES
1 - CORE
2 - CORD

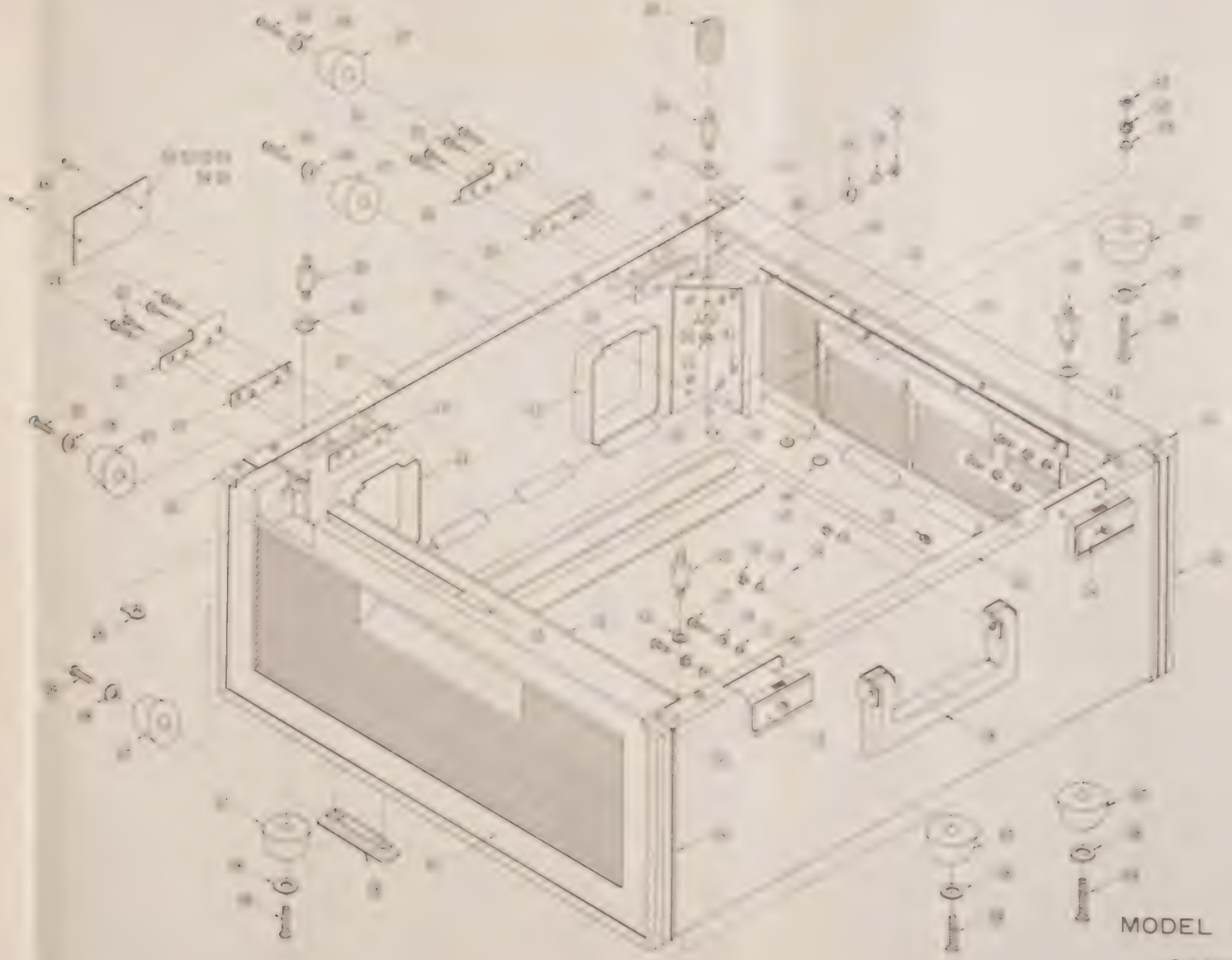
MODEL SV-700US.ES

WIRING DIAGRAM

SV-700UC(US),EC(ES) CABINET ASSEMBLY

Symbol	Description		Qty.	Stock No.
01	Cabinet		1	061021
02	Trimming Metal (Front)		1	003114
03	" " (Rear)		1	003115
04	Sash (1)		2	003116
05	Corner Trimming Piece (1)		2	003152
06	" " " (2)		2	003153
07	Rubber Bushing		8	003120
08	Washer, Plain	4	14	600847
09	Screw, Round Hd.	4x25	6	601094
10	Washer, Toothed, Internal	4	8	600876
11	Nut	4	1	600892
12	Sash, Inner		2	003108
13	Lock Assy (1)		1	003119
14	" " (2)		1	003179
15	Washer, Plain	3	4	600846
16	" Spring	3	4	600870
17	Screw, Round Hd.	3x10	4	601034
18	Handle Assy		1	003117
19	Nut, Plate		2	003123
20	Seat, Hinge		2	003126
21	Hinge Assy (1)		1	003118
22	" " (2)		1	003180
23	Screw, Wood, Oval Countersunk Hd.	2.7x10	4	600570
24	" Oval Countersunk Hd.	2.6x12	4	600572
25	Top Plate Support (1)-B		3	051136
26	Special Nut		4	051139
27	Not Used			
28	Top Plate Support (1)-A		1	051135
29	Spring		1	051020

Symbol	Description		Qty.	Stock No.
30	Plate, Corner		4	003109
31	Panel, Vent		2	003111
32	Guide Rail		1	003124
33	Bushing		6	051117
34	Bed Plate		1	061066
35	Screw, Round Hd.	4x20	2	601117
36	Nut	4	4	601697
37	Screw, Wood, Flat Hd.	2.7x10	12	600556
38	" " " "	2.7x10	18	600555
39	" " Round Hd.	3.1x10	20	600537
40	" Round Hd.	3x8	8	601065
41	" Tapping, Round Hd.	3x12	8	601257
42	Washer, Plain	5	4	600849
43	Nut	4	4	600892
44	Frame, Connector		1	003121
45	" "		1	003122
46	Screw, Tapping, Round Hd.	4x20 for EC & ES	4	601271
47	Washer, Plain	4 for EC & ES	4	600847
48	Nail	1.2x10	2	602103
49-50	Not Used			
51	Nameplate for UC		1	069044
52	" for EC		1	069145
53	Not Used			
54	Nameplate for US		1	069134
55	" for ES		1	069135
56	Hanger, Cord for EC & ES		2	060085

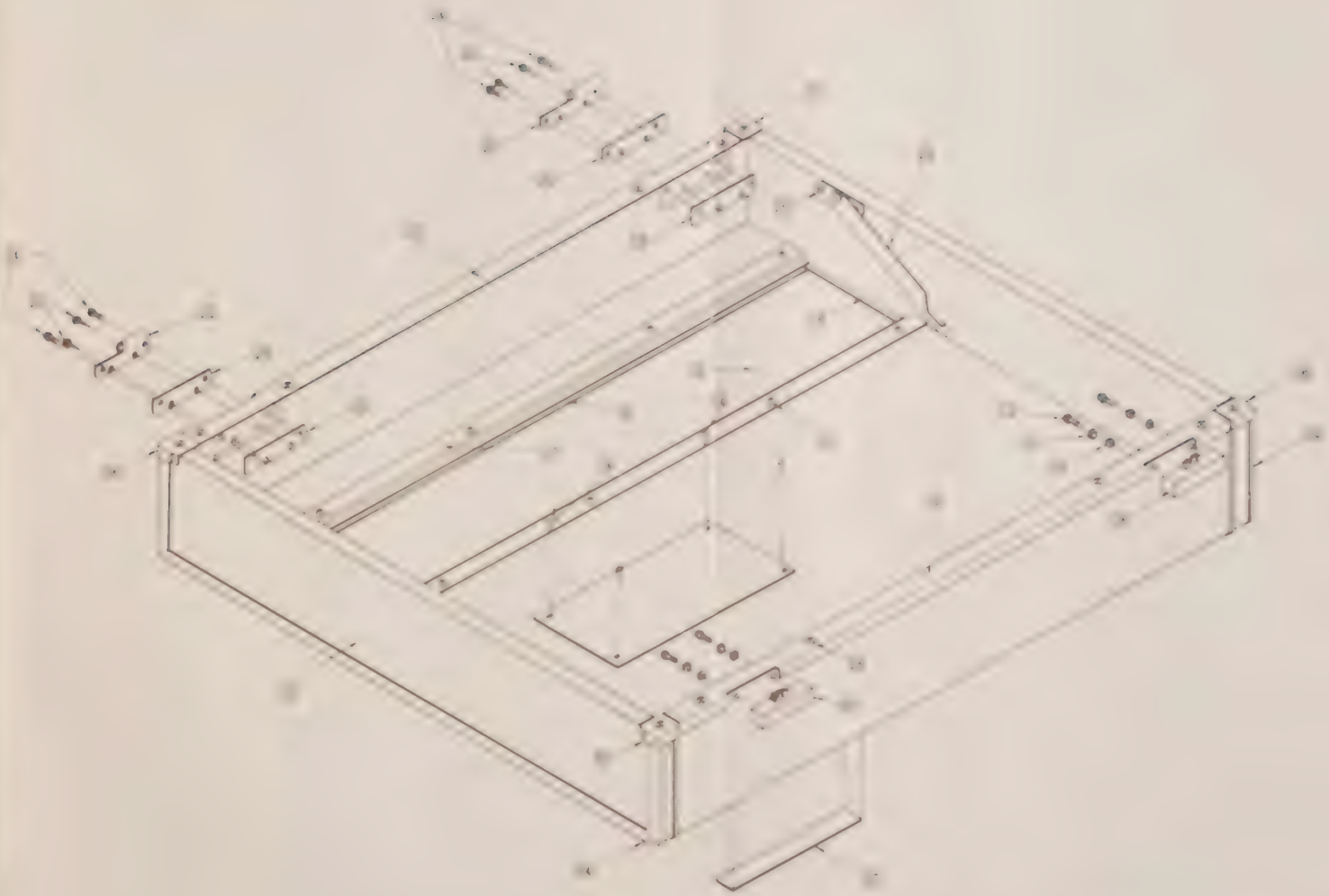


MODEL SV-700UC US.EC.ES

CABINET ASSEMBLY

SV-700UC(US),EC(ES) CABINET COVER ASSEMBLY

Symbol	Description		Qty.	Stock No.
01	Cabinet Cover		1	003127
02	Trimming Metal (Front)		1	003114
03	" " (Rear)		1	003115
04	Sash (2)		2	003130
05	Corner Trimming Piece (1)		2	003152
06	" " " (2)		2	003153
07	Nameplate		1	069104
08	Lock Assy (1)		1	003119
09	" " (2)		1	003179
10	Washer, Plain	3	4	600846
11	" Spring	3	4	600870
12	Screw, Round Hd.	3x10	4	601034
13	Label, Function Indicating		1	069106
14	Nail	1.2x10	4	602103
15	Window Glass		1	003131
16	Frame (1), Glass Holding		2	003132
17	" (2) " "		2	003113
18	" (3) " "		2	003134
19	Nut, Plate		2	003123
20	Seat, Hinge		2	003126
21	Hinge Assy (1)		1	003118
22	" " (2)		1	003180
23	Screw, Wood, Oval Countersunk Hd.	2.7x10	4	600570
24	" Oval Countersunk Hd.	2.6x12	4	600101
25	Stopper Assy		1	003128
26	Screw, Wood, Flat Hd.	2.4x10	2	600554
27	" " Round Hd.	2.4x10	8	600534
28	" " Flat Hd.	2.7x10	12	600556



MODEL SV-700UC(US),EC(ES)

CABINET COVER ASSEMBLY

SV-700UC(US),EC(ES) TAPE DECK ASSEMBLY I

Symbol	Description	Qty.	Stock No.
01	Top Plate Assy	1	796049
02	Spindle, Reel Holder	2	755002
03	Washer, Reel Holder Spindle	2	755003
04	Spacer, Reel Holder Spindle Support	3	750011
05	Spindle, Reel Holder	1	755001
06	Spring Retainer and Stopper	1	750014
07	Insulating Paper (B)	1	760001
08	Micro-switch AM7790 for UC & EC	1	741003
09	Stopper	1	760002
10	Timer Assy	1	796002
11	Holder, AGC Lamp	1	750025
12	Recording Button Assy	1	796036
13	Indexing Lever Assy	1	796007
14	Spring Assy, Index	1	796010
15	Spacer	1	756009
16	Cam Shaft	1	756008
17	Cam Assy	1	796050
18	Link Wire (1)	1	758013
19	Operating Lever	1	061026
20	Arm (2) Assy, Pinch Roller Link	1	796011
21	Actuator	1	753003
22	Guide (1), Link Wire	1	758019
23	Link Wire (B), Take-up	1	757028
24	Link Wire, Shifter	1	757030
25	Link (A), Take-up	1	757023
26	Link (B), Take-up	1	757024
27	Link Wire (A), Take-up	1	757027
28	Link, Intermediary	1	758014
29	Link Wire (2)	1	758016
30	Back Tension Lever Assy	1	796008
31	Spring	1	758015
32	Shifter Link Assy	1	796057
33	Idler Spring	2	757009
34	Washer, Adjusting 6.3 0.05t,0.1t, 0.2t, 0.3t,0.5t	10	703006-10

Symbol	Description	Qty.	Stock No.
35	Collar, Idler 10-6.2	1	757003
36	Idler	3	757034
37	Felt, Oil Impregnated	3	757008
38	Supporter, Idler (1)	1	757020
39	Washer, Idler (1) & (2) Link	1	757019
40	Link, Idler (1) & (2)	1	757018
41	Holder, Idler (1)	1	796051
42	" " (2)	1	796052
43	Washer, Adjusting 5.3 0.05t,0.1t 0.2t, 0.3t,0.5t	4	703001-5
44	Wire Spring	1	757015
45	Reel Holder (1) Assy (A) Supply Side	1	796048
46	" " (1) " (B) Take-up Side	1	796034
47	" " (2) " (A) Supply Side	1	796032
48	" " (2) " (B) Take-up Side	1	796005
49	Felt (C)	2	755016
50	Washer, Reel Holder Spindle Adjusting 0.4t,0.6t,0.8t	2	703019-21
51	Washer 7.5 Delrin	2	755013
52	" 5.8	2	755014
53	Belt (B), Rubber	1	761007
54	" (A) Counter Rubber	1	761008
55	Pulley (A) & (B) Assy	1	796006
56	Reel Holder (A)	2	755004
57	" " (B)	2	755018
58	" " (C) Supply Side	1	755020
59	" " (C) Take-up Side	1	755019
60	Spring, Reel Holder	2	755008
61-63	Not Used		
64	Support (1) for US & ES	1	050136
65-70	Not Used		
71	Screw, Round Hd. 2.6x6	2	601018
72	Washer, Spring 2.6	2	600861
73	Screw, Round Hd. 3x6 for US & ES	1	601040
	for UC & EC	10	"

Symbol	Description		Qty.	Stock No.
74	Screw, Round Hd.	3x8	3	601033
75	" " "	3x8	2	601030
76	" " "	3x16	2	601036
77	Washer, Spring	3	13	600863
78	" Toothed, External	3	2	600888
79	" Plain	3	4	600886
80	Screw, Round Hd.	4x6	1	601088
81	" " "	4x18	3	601103
82	" Set, Hexagon Socket	4x6	1	600776
83	" " " "	4x10	2	600775
84	Washer, Spring	4	5	600865
85	Nut	4	2	600892
86	"	4	2	601697
87	Retaining Ring Type E-4		11	600937
88	" " Type E-8		2	600943
89	Screw, Flat Hd.	4x16	3	601403

MODEL SV-700UC(US),EC(ES)
TAPE DECK ASSEMBLY 1

SV-700UC(US),EC(ES) TAPE DECK ASSEMBLY 2

Symbol	Description	Qty.	Stock No.
01	Top Plate Assy	1	796049
02	Cam Shaft	1	756008
03	Lever, Operating	1	061026
04	Spacer	1	756009
05	Cam Assy	1	796050
06	Link Wire (2), Assy, Brake	1	796043
07	Guide, Link Wire	1	758011
08	Support, Shifter Link Wire	1	757038
09	Switch, Leaf Spring WD-144	1	741002
10	Pinch Roller Arm (2) Assy	1	796011
11	Actuator	1	753003
12	Guide (1), Link Wire	3	758019
13	Brake (2), Base Assy	1	796045
14	Brake (2) Assy	1	796040
15	Spring, Brake (2)	1	758028
16	Bolt, Adjusting, Brake Spring	2	758026
17	Link Wire (1), Brake	1	758022
18	Spring, Brake (1)	1	758027
19	Brake (1) Assy	1	796039
20	Brake (1) Base Assy	1	796044
21	Washer, Link	1	758021
22	Link Wire, Back Tension	1	758018
23-30	Not Used		
31	Screw, Round Hd. 2.6x6	1	601018
32	" " " 3x6	2	601040
33	" " " 3x8	6	601041
34	" " " 4x6	1	601088
35	" " " 4x8	4	601089

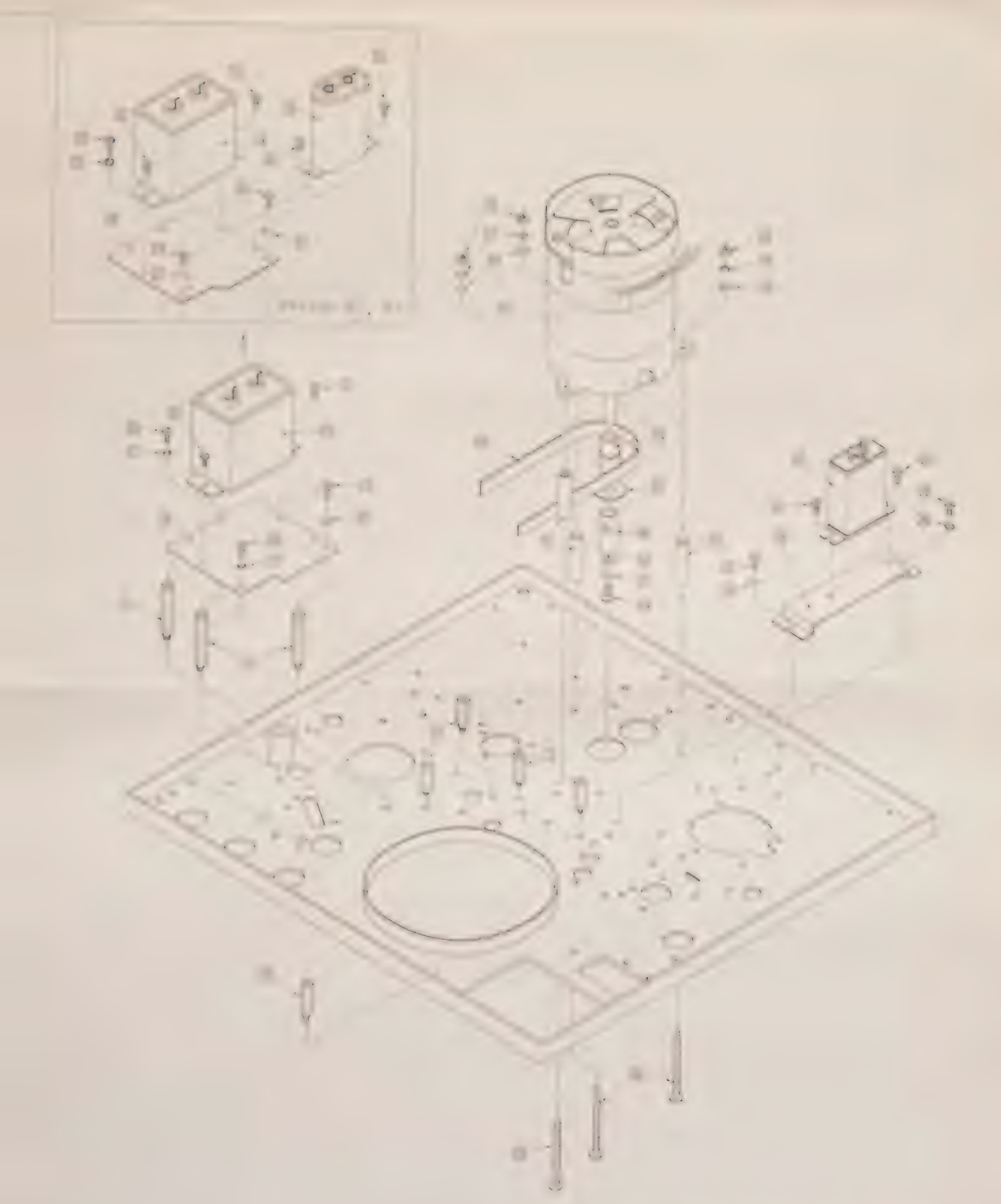
Symbol	Description		Qty.	Stock No.
36	Washer, Spring	2.6	1	600861
37	" "	3	7	600863
38	" "	4	4	600865
39	Nut	4	2	600892
40	"	2	4	601693
41	Retaining Ring Type E-3		2	600940
42	" " Type E-4		2	600937
43	" " Type E-1.5		1	600956
44	Washer, Plain	3	4	600845
45	Screw, Set, Hexagon Socket	4x10	2	600775
46	" " " "	4x6	1	600776

MODEL SV-700UC(US),EC(ES)

TAPE DECK ASSEMBLY 2

SV-700UC(US),EC(ES) TAPE DECK ASSEMBLY 3

Symbol	Description	Qty.	Stock No.
01	Capstan Motor Assy	1	796028
02	Belt, Capstan	1	751004
03	Support, Capstan Motor	3	751005
04	Pulley, Motor	1	751006
05	Ring Plate	1	751008
06	Pulley, Idler	1	751007
07	Capacitor MP(3.5+0.5μF)	1	733003
08	Plate (1), Capacitor Mounting	1	750018
09	Capacitor MP(30μF) for UC & US	1	733005
10	Plate (2), Capacitor Mounting	1	750019
11	Post, Capacitor Mounting Plate	3	750017
12	" Amplifier Chassis	4	750016
13	" Power Unit Chassis	1	750015
14	Capacitor, MP(35μF) for EC & ES	1	733002
15	" MP(7μF) for EC & ES	1	733004
16-19	Not Used		
20	Nut 4	3	600892
21	Screw, Tapping, Round Hd. 3x6	4	601254
22	" Round Hd. 3x6	2	601040
23	" " " 4x8	3	601089
24	" " " 5x10	1	601209
25	" Flat Hd. 4x50	3	600395
26	Washer, Spring 3	2	600863
27	" " 4	6	600865
28	" " 5	1	600867
29	" Plain 4	3	600847
30	" " 5	1	600849



MODEL SV-700UC(US),EC(ES)

TAPE DECK ASSEMBLY 3

SV-700UC(US),EC(ES) TAPE DECK ASSEMBLY 4

Symbol	Description		Qty.	Stock No.
01	Cylinder, Lower		1	762044
02	Disc		1	762050
03	Slip Ring Assy		1	796020
04	Holder, Video Head		2	762060
05	Video Head		2	796061
06	Cylinder, Upper		1	762052
07	Support, Cylinder Cover		3	051026
08	Plate, Brush Adjusting		1	762029
09	Brush Assy		1	796060
10	Screw, Adjusting		1	762030
11	Nut, Flat Cap Hd.		1	762028
12	Washer, Tape Guide		1	762034
13	Band, Tape Guide		1	762025
14	Tape Carrier (1)		3	762023
15	" " (2)		1	762024
16	Spacer (C), Motor		3	762021
17	Flexible Plate		1	762053
18	Spacer (A)		3	762022
19	Motor Coupling, Rubber		1	762065
20	Motor, Disc Driving	L-38M	1	796030
21	Capstan Assy	for UC & US	1	796016
	" "	for EC & ES	1	796058
22	Belt, Capstan		1	751004
23	Shaft, Pinch Roller Arm (1)		1	752006
24	Pinch Roller Arm (1) Assy		1	796023
25	Spring Assy, Pinch Roller		1	796017
26	Spring, Inclined Cone Guide		2	762033
27	Inclined Cone Guide (1)		1	762031

Symbol	Description		Qty.	Stock No.
28	Inclined Cone Guide (2)		1	762032
29	Post (2), Tape Guide	Audio Side	1	762058
30	" (1) " "	Eraser Side	1	762057
31	Tape Holder (3)		1	762062
	" " (3)	for US & ES	1	765028
32	Screw, Head Height Adjusting		2	762042
33	Holder, Guide Post		1	762056
34	Spring " "		1	762059
35	Guide Post		1	762055
36	Guide Roller Assy		1	796059
37	Spring, Tension Arm		1	754009
38	Audio & Audio-Erase Head,	Bunch Type	1	796025
39	Plate, Adjusting		1	762045
40	Spring, Pressure		6	762047
41	Base	Bunch Type	1	762046
42	Audio Head	Separate Type	1	796063
43	Audio-Erase Head	" "	1	796064
44	Plate, Adjusting	" "	2	762049
45	Base	" "	1	762048
*46	Audio Head Assy	Bunch Type	1	796053
*47	" " "	Separate Type		
48	Printed Board, VHA		1	093053
49	Erase Head,	EH-702	1	796046
50	Plate, Erase Head Mounting		1	762064

Note: * Two kinds of the tape deck assembly 4 are employed in the SV-700UC(EC,US,ES). One employs the audio head assembly of a bunch type and the other the audio head assembly of a separate type.

Symbol	Description			Qty.	Stock No.
51	Cylinder Cover Assy			1	061020
52	DTP Head Assy			1	796027
53	Photo Transistor Mount Assy,		for US & ES	1	061075
54	Holder, Pilot Lamp		"	1	051131
55	Support		"	1	051134
56	Cover, Pilot Lamp		"	1	069089
57	Pilot Lamp	E-5	"	1	765029
58	Socket, Pilot Lamp	E-5	"	1	765030
59	Support, VHA,	M3		1	762039
60	Not Used				
61	Screw, Round Hd.		2.6x6	4	601011
62	" " "		2.6x6	13	601018
63	" " "		2.6x8	2	601019
64	" Flat Hd.		2.6x4	2	600083
65	" Truss Hd.		2.6x6	3	600107
66	Washer, Spring		2.6	19	600861
67	Screw, Round Hd.		3x5	2	601031
68	" " "		3x6	3	601032
69	" " "		3x8	6	601323
70	" " "		3x10	10	601324
71	Not Used				
72	Screw, Truss Hd.		3x4	8	600247
73	Washer, Spring		3	12	600863
74	" "		3	5	600870
75	" Plain		3	5	600846
76	Bolt, Hexagon Socket Hd. UNBRAKO		3x20	2	600809

Symbol	Description		Qty.	Stock No.
77	Bolt, Hexagon Socket Hd. UNBRAKO	3x25	2	600811
78	Screw, Round Hd.	4x18	3	601103
79	" Set, Hexagon Socket	4x6	4	600776
80	Bolt, Hexagon Socket Hd.	4x15	1	600777
81	" " " "	4x25	5	600828
82	"	4x20	3	600820
83	"	4x40	3	600823
84	Washer, Spring	4	15	600865
85	" Plain	4	5	600887
86	Nut	6	1	600894
87	Washer, Spring	6	1	600868
88	Retaining Ring	E-5	1	600938
89	Washer, Adjusting	6.3	1	703006-10
90	Screw, Flat Fillister Hd. for US & ES	2x6	1	600069
91	" Round Hd. for US & ES	3x12	1	601043
92	Nut	3	1	601680
93	" for US & ES	3	1	600891
94	Washer, Toothed, Internal for US & ES	3	2	600875
	for UC & EC		1	

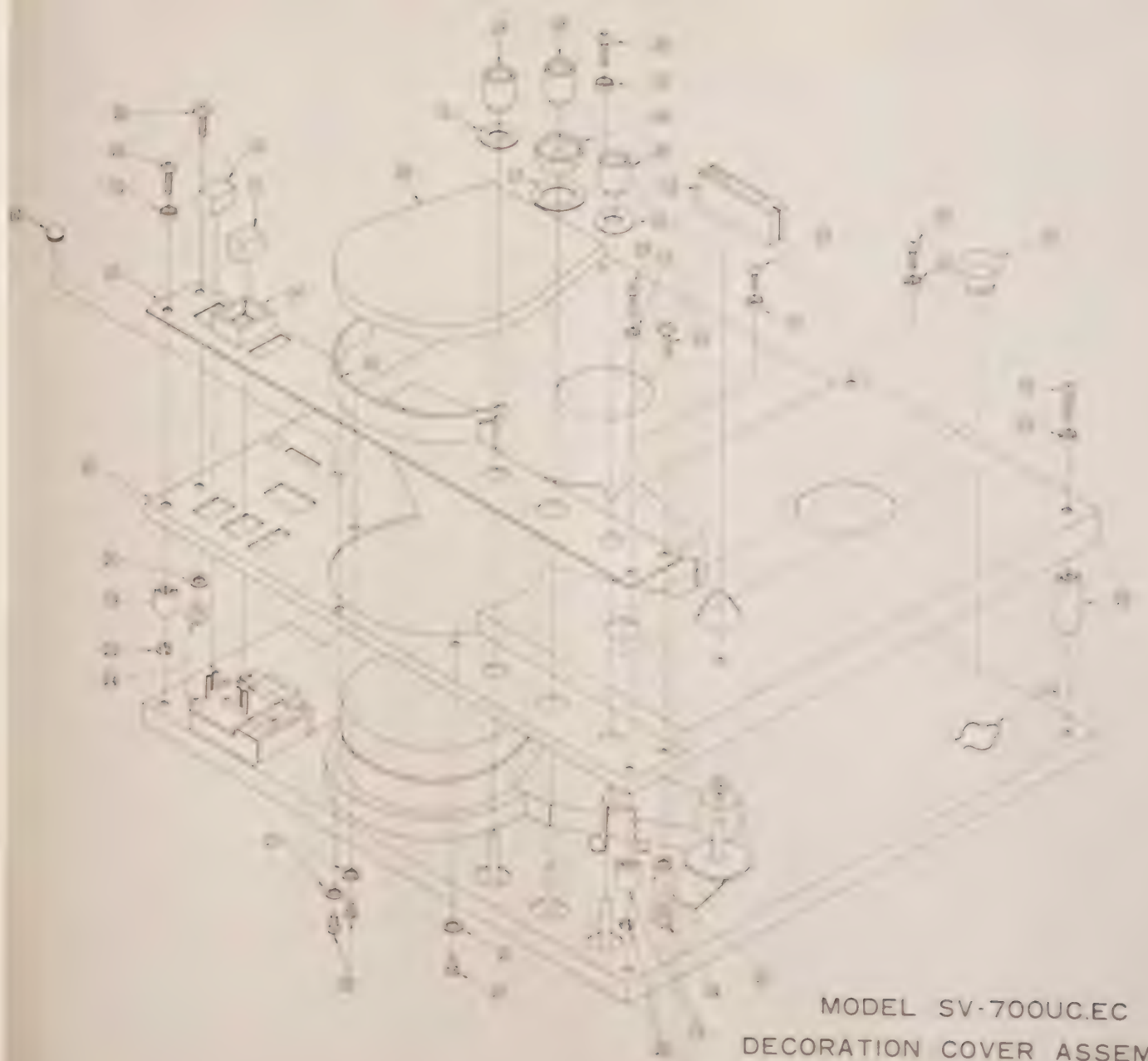
SV-700US,ES TAPE DECK ASSEMBLY 5

Symbol	Description		Qty.	Stock No.
01	Top Plate Assy		1	796065
02	Motor MS-2		1	796066
03	Link Support Assy		1	796067
04	Self-Lock Assy		1	796068
05	Spring Hanger & Stopper		1	750014
06	Roller (1), Cam		1	753004
07	Support, Motor		2	765002
08	Plate, Switch Mounting		1	765003
09	Plate, Shield		1	765004
10	Hanger, Spring		2	765007
11	Link		1	765009
12	Idler (A)		1	765011
13	Pin, Coupling		1	765013
14	Shaft, Roller		1	765014
15	Spring (1)		1	765024
16	" (2)		1	765025
17	Micro-switch		1	741006
18-20	Not Used			
21	Screw, Round Hd.	2.6x25	2	601022
22	" " "	3x4	3	601039
23	" " "	3x5	5	601055
24	" " "	3x6	5	601040
25	Washer, Toothed, External	2.6	2	600881
26	" Spring	3	13	600863
27	Retaining Ring Type E-2.4		1	600948
28	" " Type E-3		2	600940
29	" " Type E-4		2	600937

MODEL SV-700US.ES
TAPE DECK ASSEMBLY 5

SV-700UC,EC DECORATION COVER ASSEMBLY

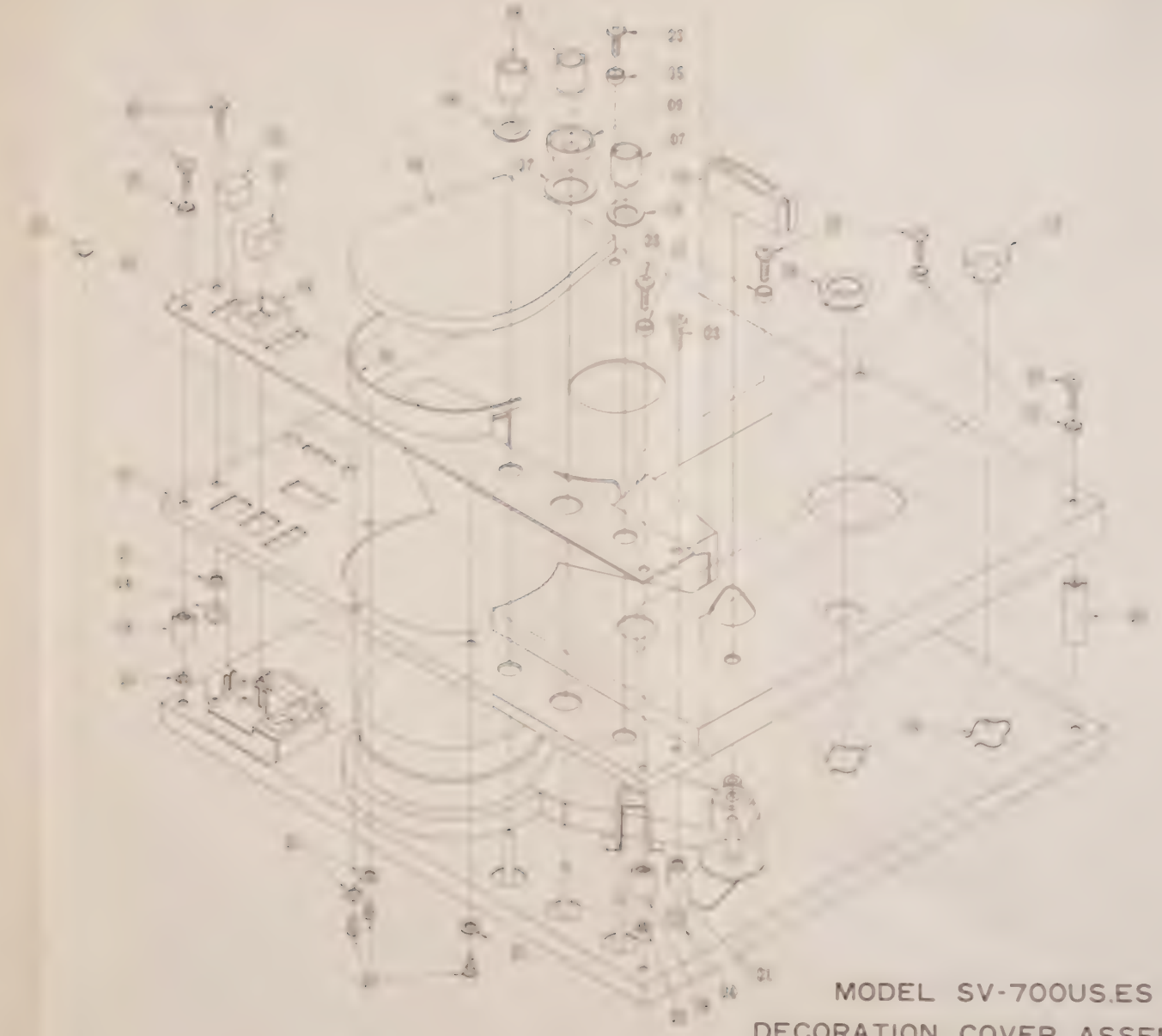
Symbol	Description		Qty.	Stock No.
01	Decoration Cover		1	061074
02	Plate, AGC Lamp Indicating		1	750026
03	Operation Panel		1	061063
04	Cover, After-recording Switch		1	061017
05	Guard, Cylinder		1	061014
06	Cylinder Cover Assy		1	061020
07	Knob (1)		1	097005
08	" (2)		2	097006
09	" (3)		1	097007
10	Lever, Operating		1	061026
11	Pushbutton Switch, Audio		1	097008
12	" " Power		1	061061
13	Guard, REC Button		1	061062
14	Clip		1	061016
15	Washer, Plain		6	061027
16	" " Knob (1)		2	061023
17	" " " (2)		1	061024
18	Not Used			
19	Support 2-(A)		3	051137
20	" 2-(B)		1	051138
21	Washer, Toothed, Internal	3	5	600875
22	Screw, Round Hd.	3x6	3	601040
23	" Binding Hd.	3x8	8	600294
24	Nut	3	2	601274
25	Washer, Spring	6	3	600868



MODEL SV-700UC.EC
DECORATION COVER ASSEMBLY

SV-700US,ES DECORATION COVER ASSEMBLY

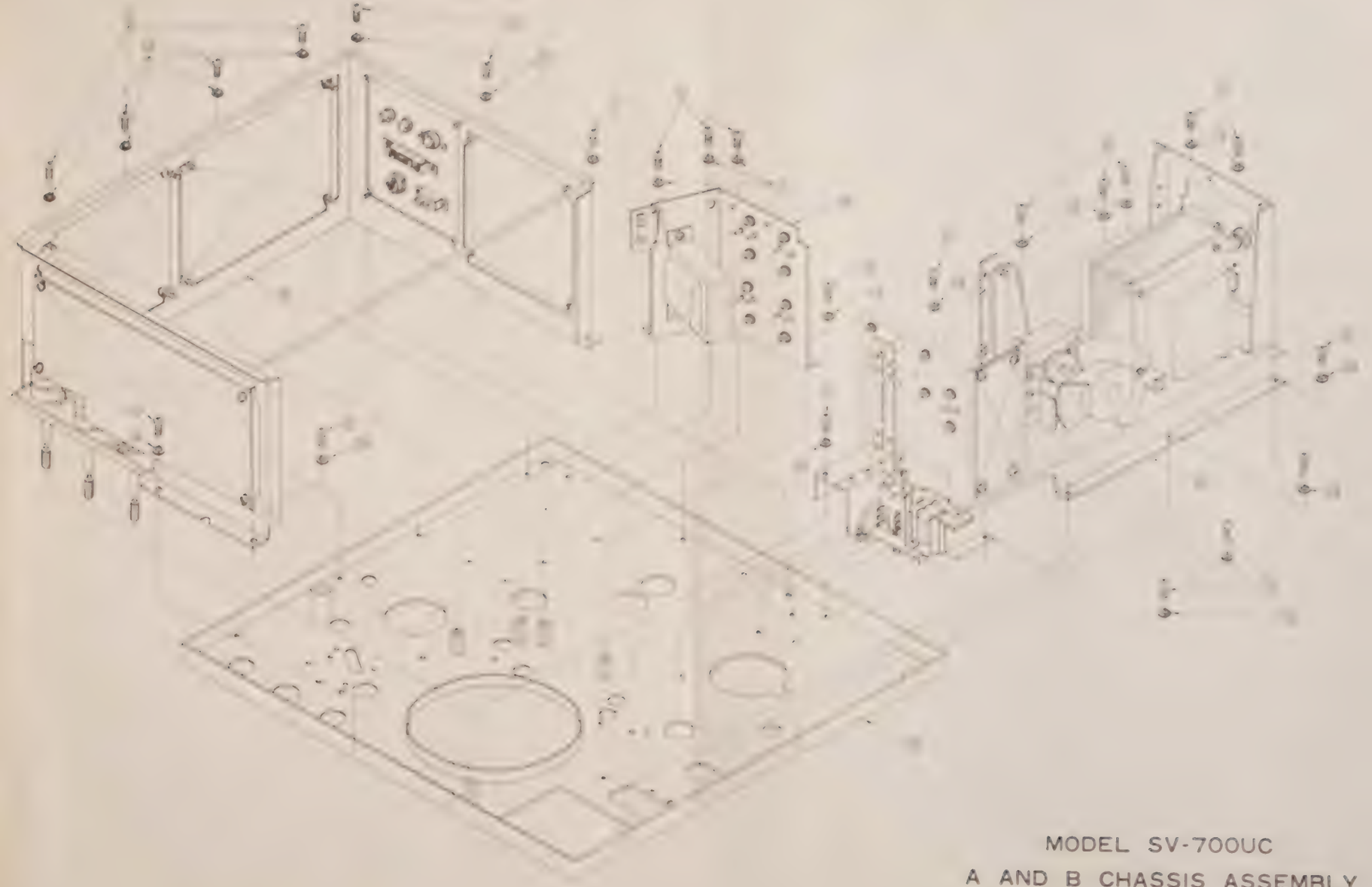
Symbol	Description		Qty.	Stock No.
01	Decoration Cover		1	061070
02	Plate, AGC Lamp Indicating		1	750026
03	Operation Panel		1	061063
04	Cover, After-recording Switch		1	061017
05	Guard, Cylinder		1	061014
06	Cylinder Cover Assy		1	061020
07	Knob (1)		1	097005
08	" (2)		2	097006
09	" (3)		1	097007
10	Lever, Operating		1	061026
11	Pushbutton Switch, Audio		1	097008
12	" " Power		1	061061
13	Guard, REC Button		1	061062
14	Clip		2	061016
15	Washer, Plain		6	061027
16	Washer, Plain, Knob (1)		2	061023
17	" " " (2)		1	061024
18	Metal Button		1	061071
19	Support 2-(A)		3	051137
20	" 2-(B)		1	051138
21	Washer, Toothed, Internal	3	5	600875
22	Screw, Round Hd.	3x6	3	601040
23	" Binding Hd.	3x8	8	600294
24	Nut	3	2	601274
25	Washer, Spring	6	3	600868



MODEL SV-700US.ES
DECORATION COVER ASSEMBLY

SV-700UC A and B CHASSIS ASSEMBLY

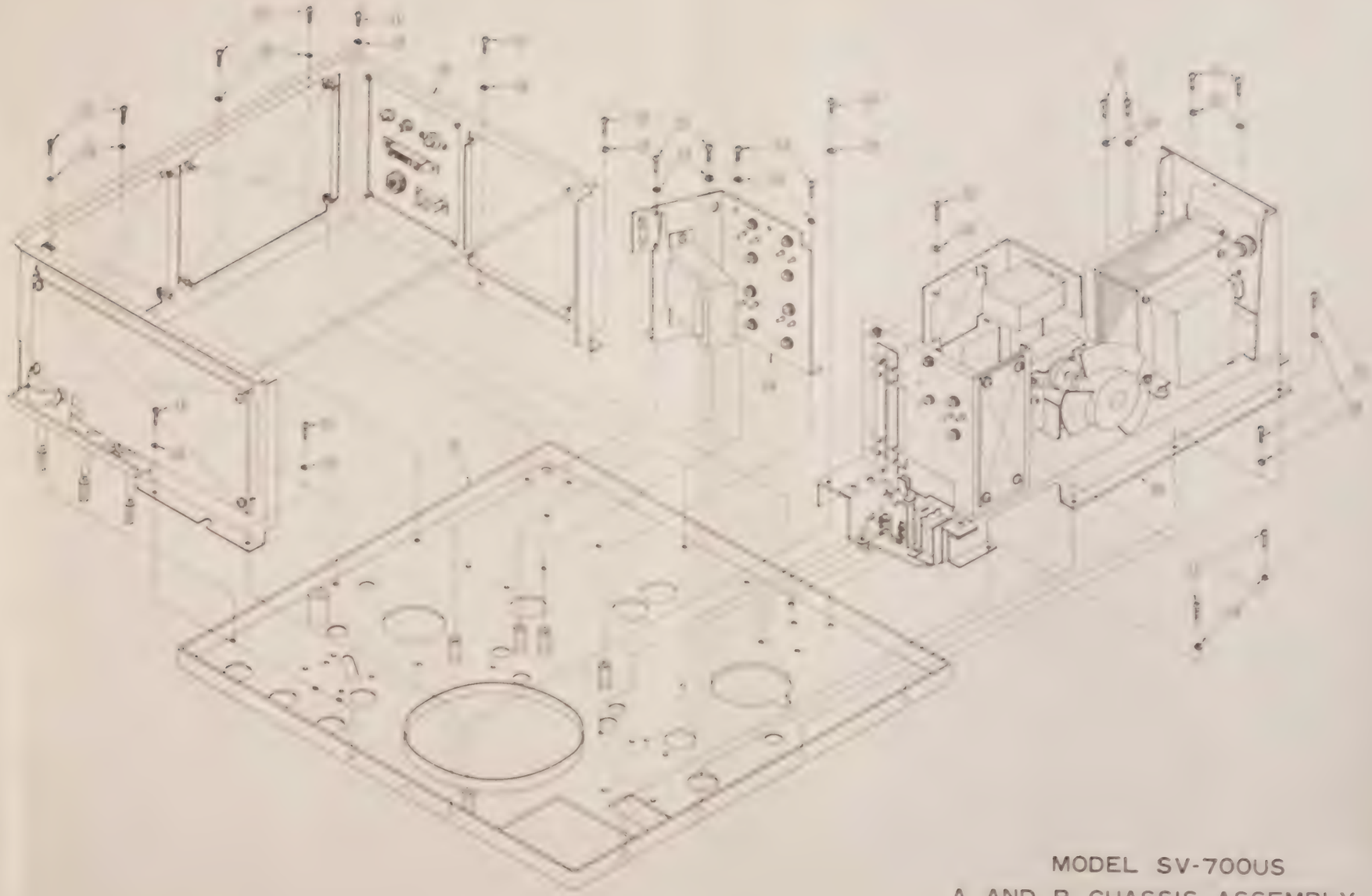
Symbol	Description		Qty.	Stock No.
01	Top Plate Assy		1	796049
02	Power Unit Assy		1	097020
03	Amplifier Assy		1	097017
04	Motor Drive Amplifier Assy		1	097018
05-09	Not Used			
10	Washer, Toothed, Internal	3	19	600875
11	Screw, Round Hd.	3x6	19	601040
12	Washer, Toothed, Internal	4	5	600876
13	Screw, Round Hd.	4x6	5	601088



MODEL SV-700UC
A AND B CHASSIS ASSEMBLY

SV-700US A and B CHASSIS ASSEMBLY

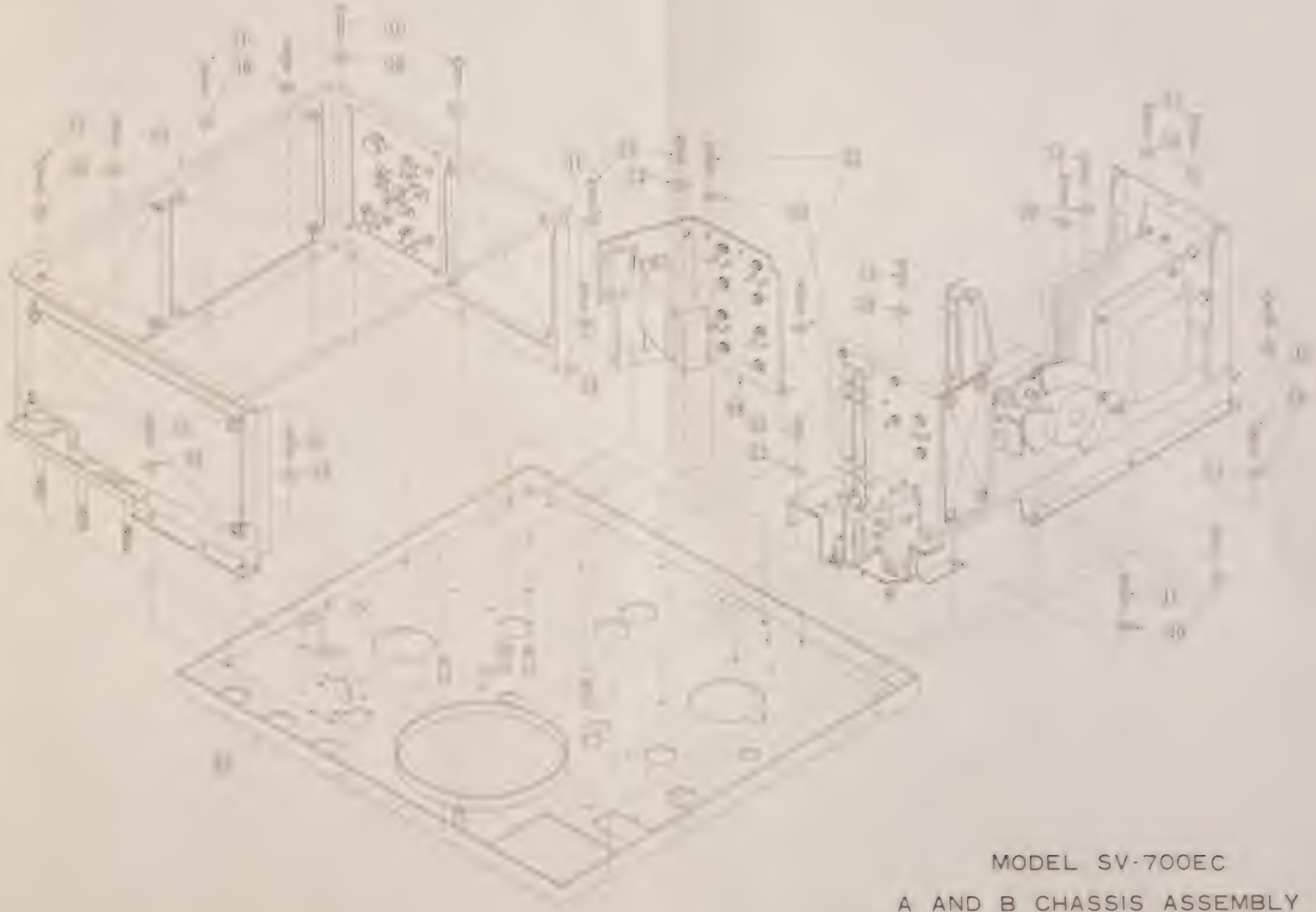
Symbol	Description		Qty.	Stock No.
01	Top Plate Assy		1	796065
02	Power Unit Assy		1	097021
03	Amplifier Assy		1	097017
04	Motor Drive Amplifier Assy		1	097018
05-09	Not Used			
10	Washer, Toothed, Internal	3	19	600875
11	Screw, Round Hd.	3x6	19	601040
12	Washer, Toothed, Internal	4	5	600876
13	Screw, Round Hd.	4x6	5	601088



MODEL SV-700US
A AND B CHASSIS ASSEMBLY

SV-700EC A and B CHASSIS ASSEMBLY

Symbol	Description		Qty.	Stock No.
01	Top Plate Assy		1	796049
02	Power Unit Assy		1	097016
03	Amplifier Assy		1	097017
04	Motor Drive Amplifier Assy		1	097018
05-09	Not Used			
10	Washer, Toothed, Internal	3	19	600875
11	Screw, Round Hd.	3x6	19	601040
12	Washer, Toothed, Internal	4	5	600876
13	Screw, Round Hd.	4x6	5	601088



MODEL SV-700EC

A AND B CHASSIS ASSEMBLY

SV-700ES A and B CHASSIS ASSEMBLY

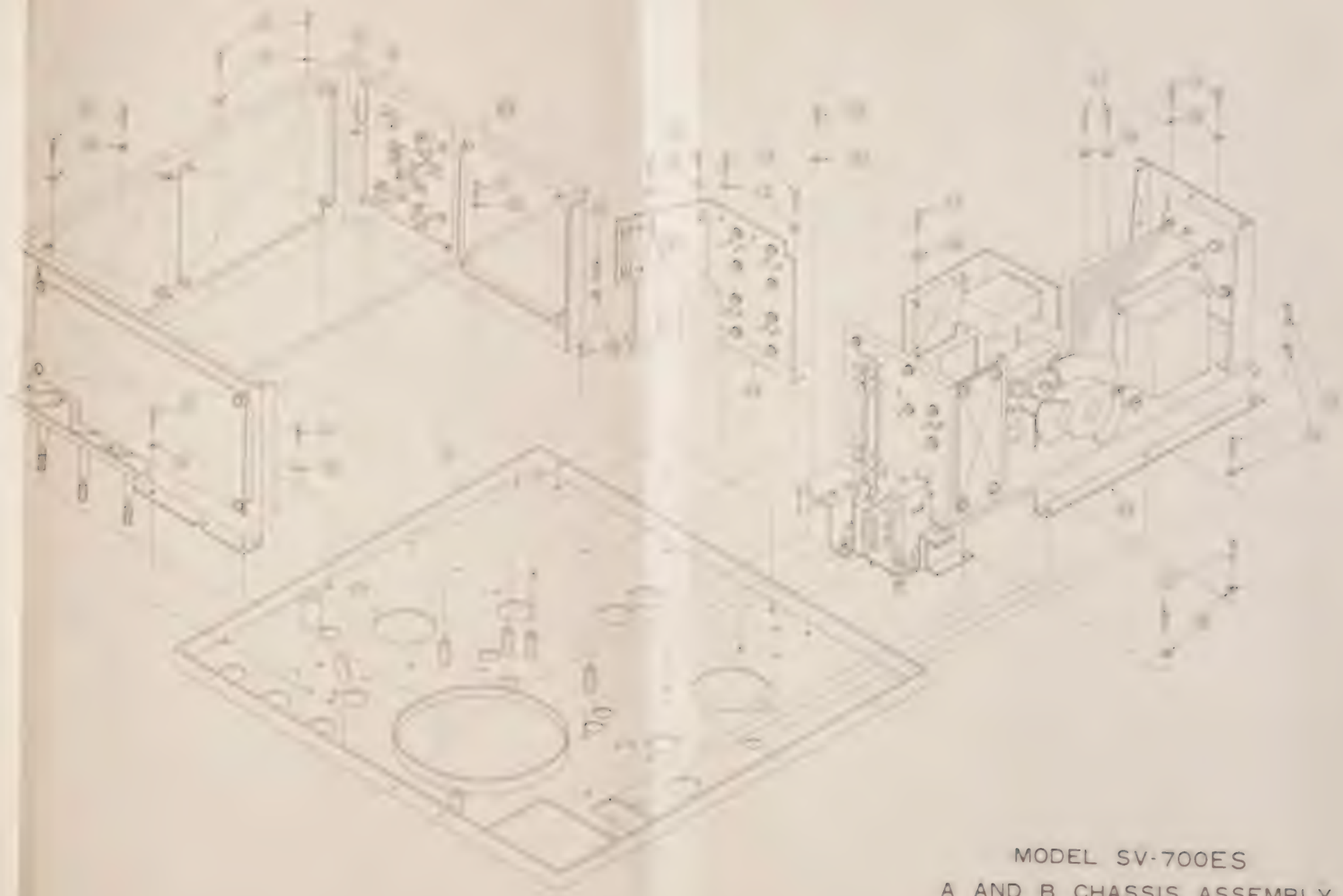
Symbol	Description		Qty.	Stock No.
01	Top Plate Assy		1	796065
02	Power Unit Assy		1	097019
03	Amplifier Assy		1	097017
04	Motor Drive Amplifier Assy		1	097018
05-09	Not Used			
10	Washer, Toothed, Internal	3	19	600875
11	Screw, Round Hd.	3x6	19	601040
12	Washer, Toothed, Internal	4	5	600876
13	Screw, Round Hd.	4x6	5	601088

MODEL SV-700ES
A AND B CHASSIS ASSEMBLY

SV-700UC B CHASSIS ASSEMBLY

Symbol	Description		Qty.	Stock No.
01	Plate, Switch Mounting		1	051118
02	Switch, Power Unit	UEH-12BF	1	041123
03	" Pushbutton	SW-610, SV-700-2	1	041104
04	" Seesaw	SQ1326-2-2	1	041102
05	Plate, Printed Board Mounting		1	051010
06	Insulating Paper, Power Switch		1	071110
07	Not Used			
08	Chassis, Power Unit		1	051008
09	Not Used			
10	Washer, Plain, SN-1301		1	
11	Nut, SN-1301		1	
12	Not Used			
13	Spacer		4	051013
14	Terminal Block	S-P1212	2	044101
15	Transistor	2SC889	1	011312
16	Printed Board, Power Supply		1	093046
17	Lamp Holder		1	051014
18	Not Used			
19	Lamp Socket	S-E0102	1	042110
20	Pilot Lamp	1054	1	043103
21	Shading Paper		1	071113
22	VU Meter	MK-23DC AVU	1	013101
23	Capacitor, Elyc	35V 4000μF	1	032106
24	Plate, Terminal Block Mounting		1	051012
25	Plate (1), Fan Mounting		1	051015
26	" (2) " "		1	051029
27	Fan Motor	EM-16	1	014101
28	Fan		1	061010
29	Bushing		1	071112

Symbol	Description		Qty.	Stock No.
30	Power Transformer	PT74	1	019127
31	Plate, Power Unit Panel Mounting		1	051122
32	Not Used			
33	Panel (1), Power Unit		1	061065
34	Washer, Plain, Connector		1	061060
35	Fuse Holder		1	042135
36	AC Connector	SI-0122	2	042140
37	" "	SI-6405	1	042170
38	Washer, Toothed, Internal	3	18	600875
39	" " "	4	6	600876
40	Lug Terminal	3	2	602001
41	Screw, Tapping, Round Hd.	3x6	25	601254
42	" " " "	3x12	4	601257
43	Not Used			
44	Screw, Round Hd.	3x10	4	601050
45	" " "	3x8	2	601049
46	" " "	4x25	2	601094
47	" " "	4x6	4	601088
48	Not Used			
49	Screw, Round Hd.	3x8	2	601033
50	" " "	3x6	10	601040
51	Not Used			
52	Nut	3	8	600891
53	"	4	2	600892

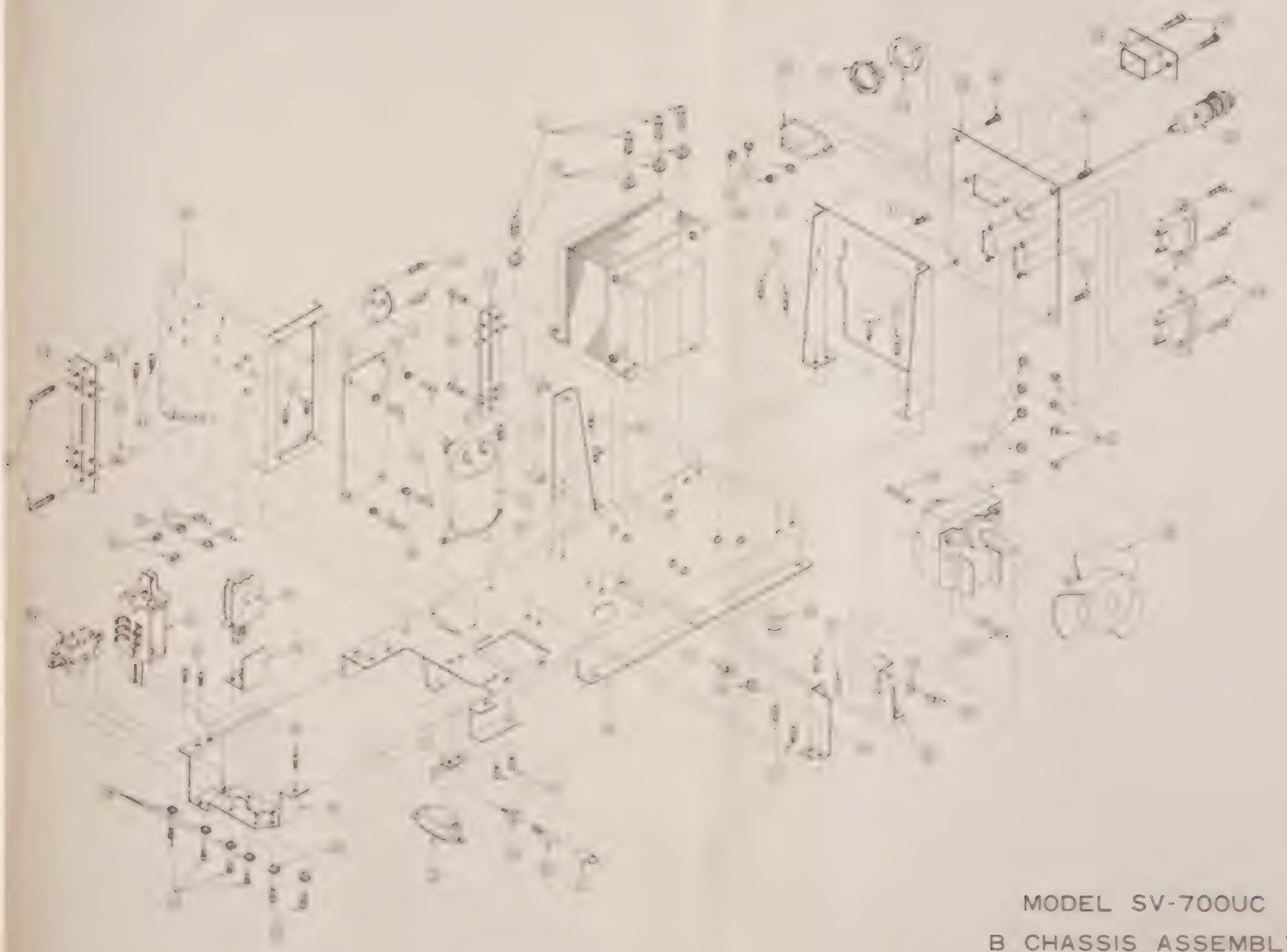


MODEL SV-700ES
A AND B CHASSIS ASSEMBLY

SV-700US B CHASSIS ASSEMBLY

Symbol	Description	Qty.	Stock No.
01	Plate, Switch Mounting	1	051118
02	Switch, Power Unit UEH-12BF	1	041123
03	" Pushbutton SW-610 SV-700-2	1	041104
04	" Seesaw SQ1326-2-2	1	041102
05	Plate, Printed Board Mounting	1	051010
06	Insulating Paper, Power Switch	1	071110
07	Relay RAB-24D-11	1	040103
08	Chassis, Power Unit	1	051008
09	Socket, Relay RAB-24D-11	1	
10	Washer, Plain SN-1301	1	
11	Nut SN-1301	1	
12	Socket Holder, Relay RAB-24D-11	1	
13	Spacer	4	051013
14	Terminal Block S-P1212	2	044101
15	Transistor 2SC889	1	011312
16	Printed Board, Power Supply	1	093046
17	Lamp Holder	1	051014
18	Printed Board, TES (Tape and Switch)	1	016132
19	Lamp Socket S-E0102	1	042110
20	Pilot Lamp 1054	1	043103
21	Shading Paper	1	071113
22	VU Meter MK-23DC AVU	1	013101
23	Capacitor, Elyc 35V 4000μF	1	032106
24	Plate, Relay Mounting	1	051130
25	Plate (1), Fan Mounting	1	051015
26	" (2) " "	1	051029
27	Fan Motor EM-16	1	014101
28	Fan	1	061010
29	Bushing	1	071112
30	Power Transformer PT74	1	019127

Symbol	Description		Qty.	Stock No.
31	Plate, Power Unit Panel Mounting		1	051122
32	Not Used			
33	Panel (1), Power Unit		1	061065
34	Washer, Plain, Connector		1	061060
35	Fuse Holder SN-1301		1	042135
36	AC Connector SI-0122		2	042140
37	" " SI-6405		1	042170
38	Washer, Toothed, Internal	3	22	600875
39	" " "	4	6	600876
40	Lug Terminal, Round	3	2	602001
41	Screw, Tapping, Round Hd.	3x6	25	601254
42	" " " "	3x12	4	601257
43	Not Used			
44	Screw, Round Hd.	3x10	4	601050
45	" " "	3x8	2	601049
46	" " "	4x25	2	601094
47	" " "	4x6	4	601088
48	Not Used			
49	Screw, Round Hd.	3x8	2	601033
50	" " "	3x6	14	601040
51	Not Used			
52	Nut	3	8	600891
53	"	4	2	600892



MODEL SV-700UC

B CHASSIS ASSEMBLY

SV-700EC B CHASSIS ASSEMBLY

Symbol	Description	Qty.	Stock No.
01	Mount, Switch	1	051118
02	Switch, Power Unit E5728	1	041209
03	" Pushbutton SW-610 SV-700-2	1	041104
04	" Seesaw SQ1326-2-2	1	041102
05	Plate, Printed Board Mounting	1	051010
06	Spacer	4	050216
07	Plate, Fuse	1	051127
08	Chassis, Power Unit	1	051008
09	Fuse, PT20-0S 3A-250V	2	043132
10	" " 1A-250V	1	043130
11	" " 1.6AT-250V	1	043131
12	Not Used		
13	Spacer	4	051013
14	Terminal Block S-P1212	2	044101
15	Transistor 2SC889	1	011312
16	Printed Board, Power Supply	1	093046
17	Holder, Pilot Lamp	1	051014
18	Not Used		
19	Socket, Pilot Lamp S-E0102	1	042110
20	Pilot Lamp 1054	1	043103
21	Shading Paper	1	071113
22	VU Meter H-6	1	013112
23	Capacitor, Elyc 35V 4000μF	1	032106
24	Plate, Terminal Block Mounting	1	051012
25	Plate (1), Fan Mounting	1	051015
26	" (2), " "	1	051029
27	Fan Motor EM-16	1	014101
28	Fan	1	061010
29	Bushing	1	071112
30	Power Transformer PT75	1	019127

Symbol	Description		Qty.	Stock No.
31	Plate, Power Unit Mounting		1	051122
32	Terminal T-3		1	044123
33	Panel (2), Power Unit		1	061058
34	Bushing		2	071117
35	Bushing, Cord		1	061076
36	Socket PSW-1		1	042129
37	Clip HP-3N		1	044125
38	Washer, Toothed, Internal	3	17	600875
39	" " "	4	6	600876
40	Lug Terminal	3	2	602001
41	Screw, Tapping, Round Hd.	3x6	27	601254
42	" " " "	3x12	4	601257
43	" " " "	3x8	2	601255
44	" Round Hd.	3x8	1	601041
45	" " "	3x8	2	601049
46	" " "	4x25	2	601094
47	" " "	4x6	4	601088
48	" " "	3x25	4	601046
49	" " "	3x8	2	601033
50	" " "	3x6	8	601040
51	Not Used			
52	Nut	3	9	600891
53	"	4	2	600892

MODEL SV-700US

B CHASSIS ASSEMBLY

SV-700ES B CHASSIS ASSEMBLY

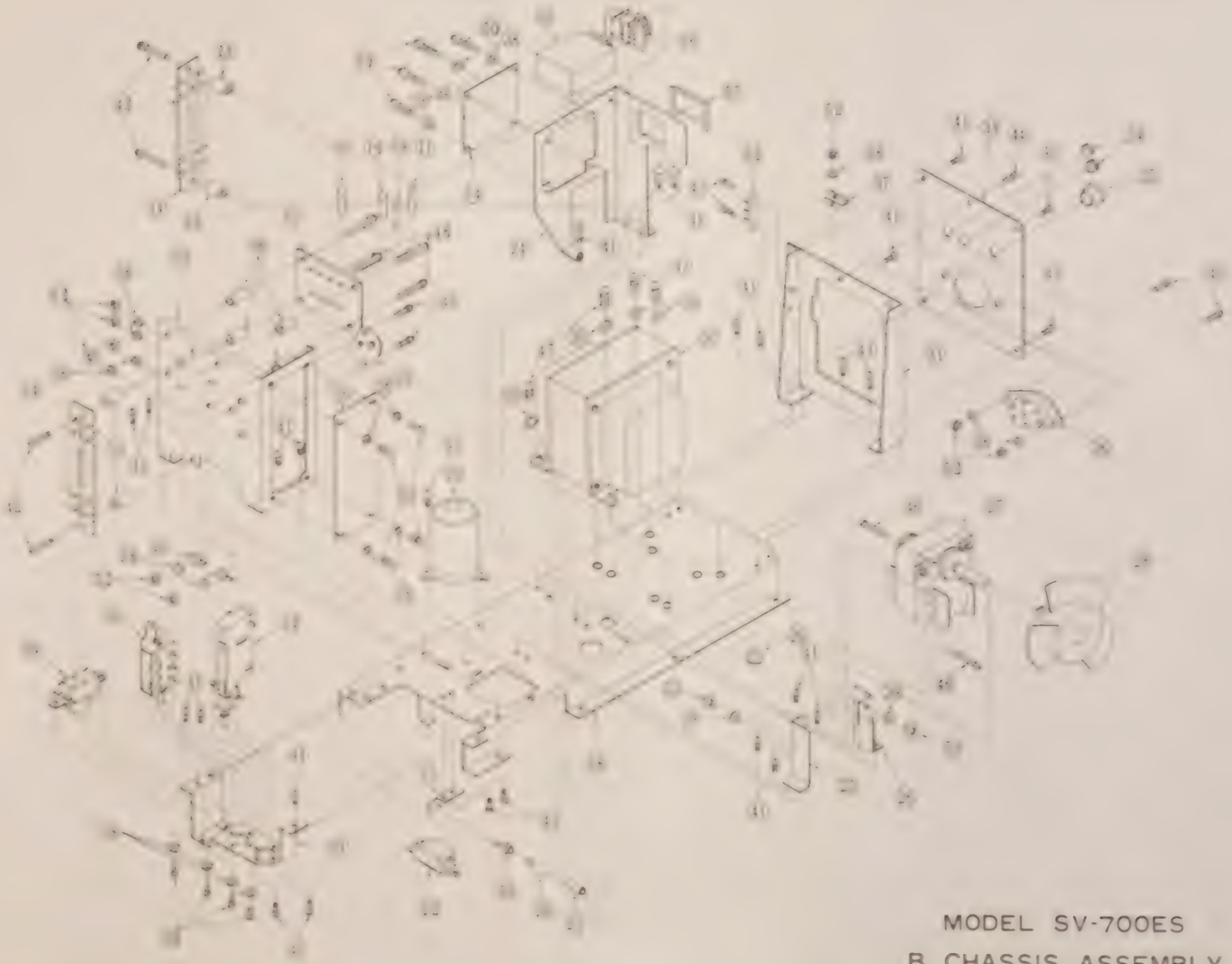
Symbol	Description	Qty.	Stock No.
01	Mount, Switch	1	051118
02	Switch, Power Unit E5728	1	041209
03	" Pushbutton SW-610, SV-700-2	1	041104
04	" Seesaw SQ1326-2-2	1	041102
05	Plate, Printed Board Mounting	1	051010
06	Spacer	4	050216
07	Plate, Fuse	1	051127
08	Chassis, Power Unit	1	051008
09	Fuse PT20-OS 3A-250V	2	043132
10	" " 1A-250V	1	043130
11	" " 1.6AT-250V	1	043131
12	Not Used		
13	Spacer	4	051013
14	Terminal Block S-P1212	2	044101
15	Transistor 2SC889	1	011312
16	Printed Board, Power Supply	1	093046
17	Holder, Pilot Lamp	1	051014
18	Not Used		
19	Socket, Pilot Lamp S-E0102	1	042110
20	Pilot Lamp 1054	1	043103
21	Shading paper	1	071113
22	VU Meter H-6	1	013112
23	Capacitor, Elyc 35V 4000μF	1	032106
24	Plate, Relay Mounting	1	051130
25	Plate (1), Fan Mounting	1	051015
26	" (2) " "	1	051029
27	Fan Motor EM-16	1	014101
28	Fan	1	061010
29	Bushing	1	071112

Symbol	Description			Qty.	Stock No.
30	Power Transformer	PT75		1	019127
31	Plate, Power Unit Mounting			1	051122
32	Terminal	T-3		1	044123
33	Panel (2), Power Unit			1	061058
34	Bushing			2	071117
35	Bushing, Cord			1	061076
36	Socket	PSW-1		1	042129
37	Clip	HP-3N		1	044125
38	Washer, Toothed, Internal		3	21	600875
39	" " "		4	6	600876
40	Lug Terminal		3	2	602001
41	Screw, Tapping, Round Hd.		3x6	27	601254
42	" " " "		3x12	4	601257
43	" " " "		3x8	2	601255
44	" Round Hd.		3x8	1	601041
45	" " "		3x8	2	601049
46	" " "		4x25	2	601094
47	" " "		4x6	4	601088
48	" " "		3x25	4	601046
49	" " "		3x8	2	601033
50	" " "		3x6	12	601040
51	Not Used				
52	Nut		3	9	600891
53	"		4	2	600892
54	Printed Board, TES (Tape End Switch)			1	016132
55	Relay	RAB-24D-11		1	040103
56	Socket, Relay	RAB-24D-11		1	
57	Holder, Socket	RAB-24D-11		1	

MODEL SV-700EC
B CHASSIS ASSEMBLY

SV-700UC(US) A CHASSIS ASSEMBLY

Symbol	Description		Qty.	Stock No.
01	Mount (1), Connector		1	061059
02	Connector,	U Type	1	042108
03	"	UHF Type	1	042104
04	Washer, Connector UHF Type		1	
05	Chassis, Amplifier		1	051005
06	Spacer		4	061002
07	Jack	SV-46	2	042105
08	Nut, Jack		2	
09	Switch, Slide	SL-13	1	041107
10	Printed Board, Modulator		1	093050
11	" "	Demodulator	1	093049
12	" "	Audio	1	093051
13	" "	Disc Servo Control	1	093048
14	Screw, Round Hd.	3x8	2	601033
15	" " "	3x6	4	601048
16	Plate, TV Socket Mounting		2	051132
17	Screw, Round Hd.	3x6	16	601040
18	" Tapping, Round Hd.	3x6	4	601254
19	Washer, Toothed, Internal	3	18	600875
20	Nut	3	2	601274
21	Nut, Connector UHF Type		1	
22	Connector	S1308-SB	1	042101
23	Resistor, Variable		1	020136
24	" "		1	020135
25	Switch, Rotary	S18-162	1	041122
26	Washer, Volume		2	
27	Nut, Volume		2	
28	Washer, Rotary Switch		1	
29	Nut, Rotary Switch		1	
30	Bushing		4	051117
31	Screw, Round Hd.	2.3x12	2	601006
32	Washer, Toothed, Internal	2.3	2	600880
33	Nut	2.3	2	601678

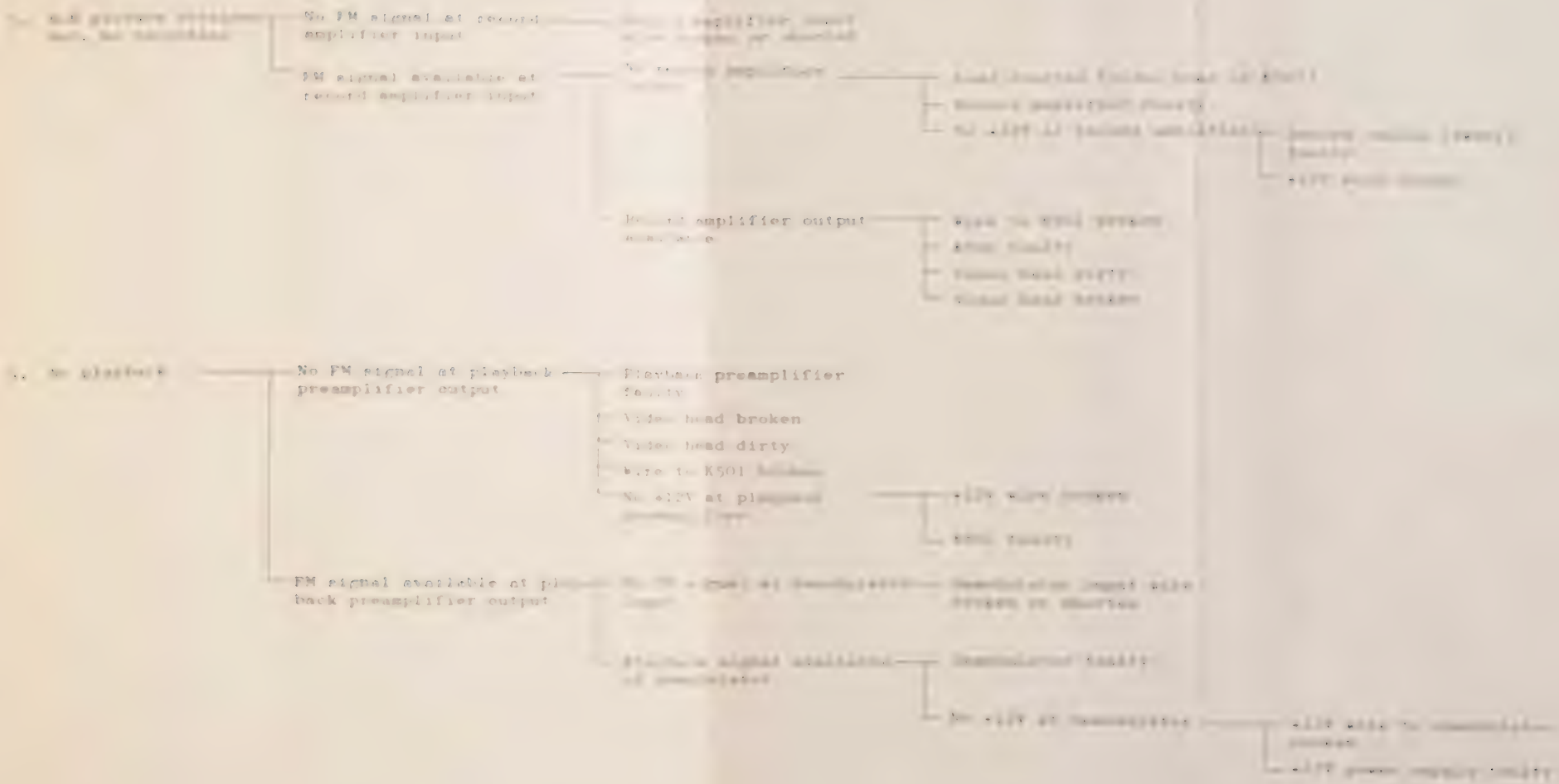


MODEL SV-700ES

B CHASSIS ASSEMBLY

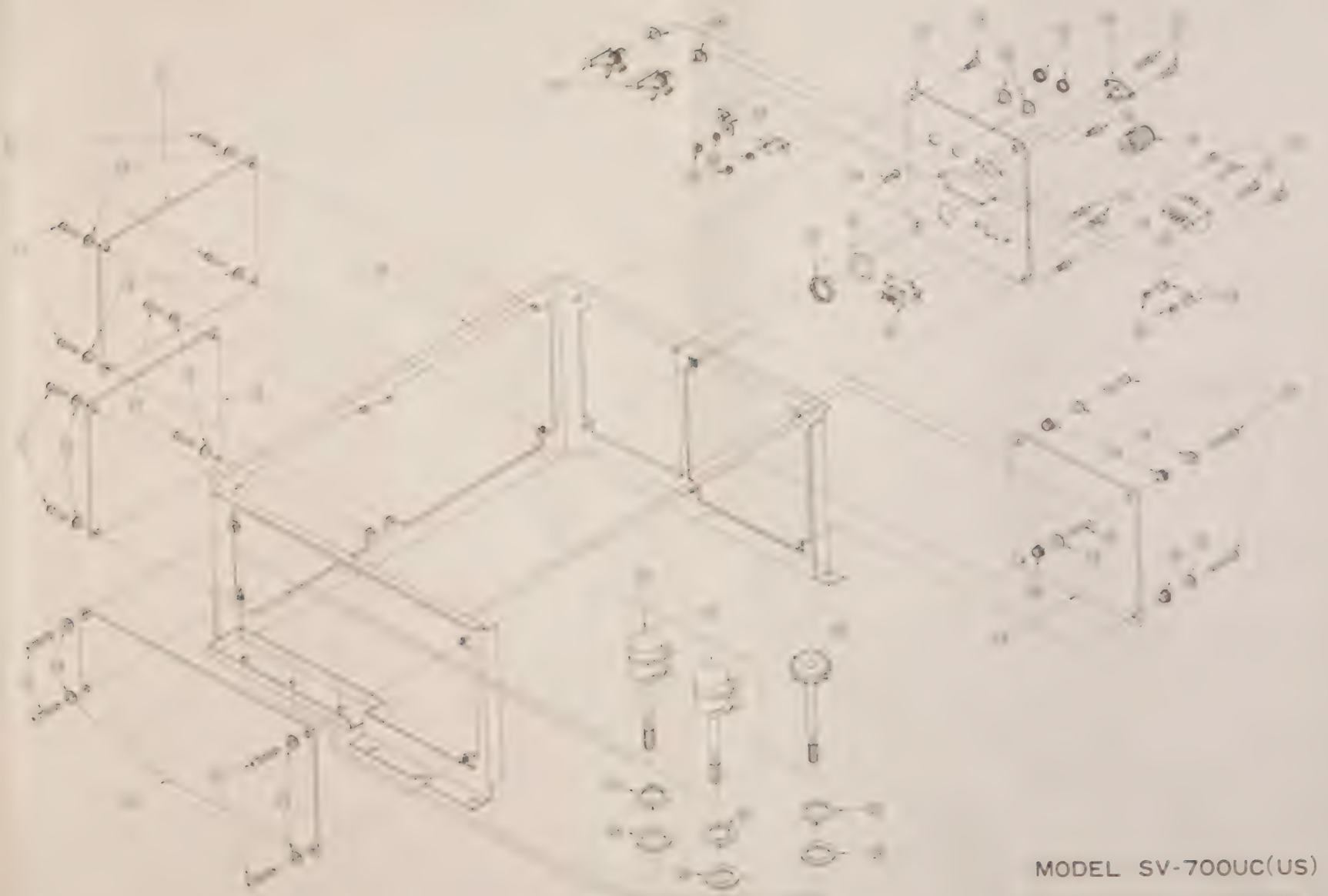
SV-700EC(ES) A CHASSIS ASSEMBLY

Symbol	Description	Qty.	Stock No.
01	Mount (2), Connector	1	061067
02	Connector U Type	3	042108
03	Plate, TV Socket	2	051132
04	Connector, S1308-SB	1	042101
05	Chassis, Amplifier	1	051133
06	Connector UHF Type	1	042104
07	Washer, Connector UHF Type	1	
08	Nut, Connector UHF Type	1	
09	Switch, Slide SL-13	1	041107
10	Printed Board, Modulator	1	093050
11	" " Demodulator	1	093049
12	" " Audio	1	093051
13	" " Disc Servo Control	1	093048
14	Screw, Round Hd. 3x8	6	601033
15	" " " 3x6	4	601048
16	" " " 2.3x12	2	601006
17	" " " 3x6	16	601040
18	" Tapping, Round Hd. 3x6	4	601254
19	Washer, Toothed, Internal 3	22	600875
20	Nut 3	6	601274
21	Washer, Toothed, Internal 2.3	2	600880
22	Nut 2.3	2	601678
23	Resistor, Variable	1	Q20136
24	" "	1	020135
25	Switch, Rotary S18-162	1	041122
26	Washer, Volume	2	
27	Nut, Volume	2	
28	Washer, Rorary Switch	1	
29	Nut, Rotary Switch	1	
30	Bushing	4	051117

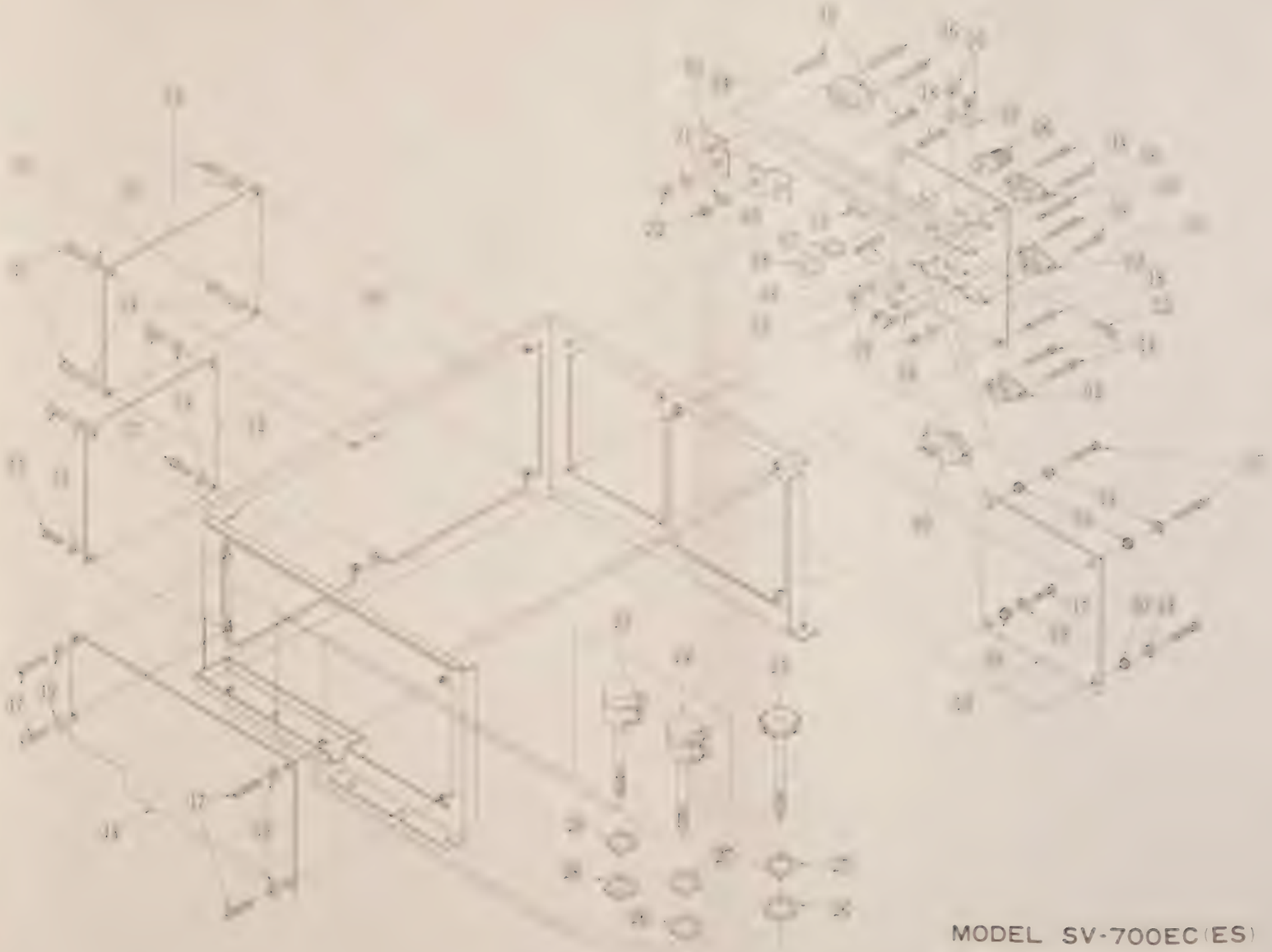


SV-700UC(US),EC(ES) MOTOR DRIVE AMP ASSEMBLY

Symbol	Description	Qty.	Stock No.
01	Myler Insulator	4	044138
02	Mount, Transistor	1	051124
03	Transistor 2SB425Y	4	011203
04	Transformer, Drive NT71	1	018101
05	Connector, Clock	1	742001
06	" "	1	642109
07	Spacer	8	051013
08	Lug Terminal	8	602001
09	Washer, Spring 3	8	600870
10	Nut 3	8	601274
11	Screw, Flat Fillister Hd. 3x12	8	600447
12	Washer, Toothed, Internal 3	2	600875
13	Screw, Round Hd. 3x6	2	601040
14	Washer, Plain 3	4	600846
15	Screw, Tapping, Round Hd. 3x6		
	for EC, ES	4	601254
	for UC, US	10	"
16	Plate, Timistor Mounting	1	051126
17	Timister OSC-4	1	013102
18	Receptacle for UC & US	2	042121
19	Mount, Socket for UC & US	1	051125
20	Label for UC & US	1	069136



MODEL SV-700UC(US)
A CHASSIS ASSEMBLY

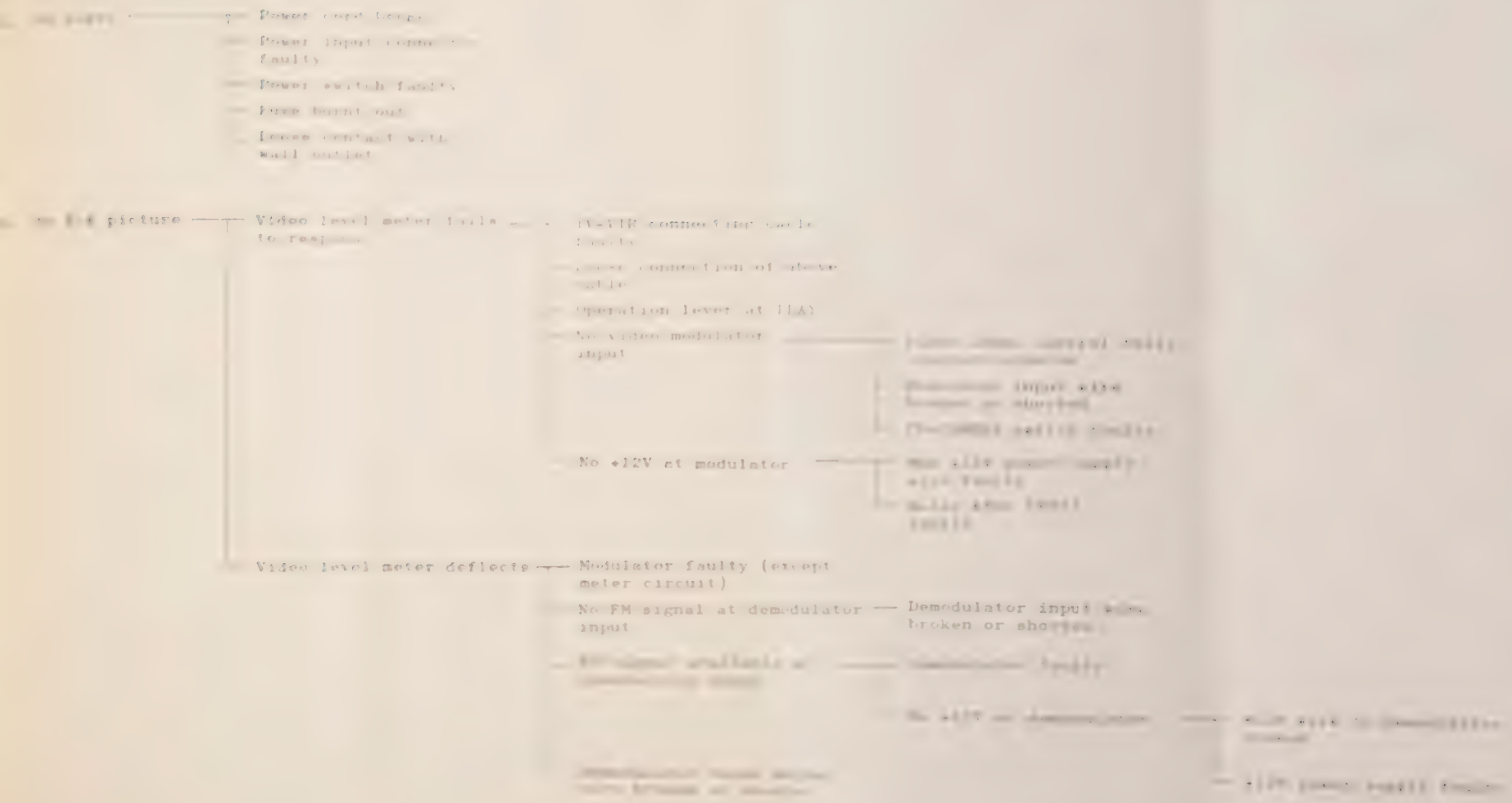


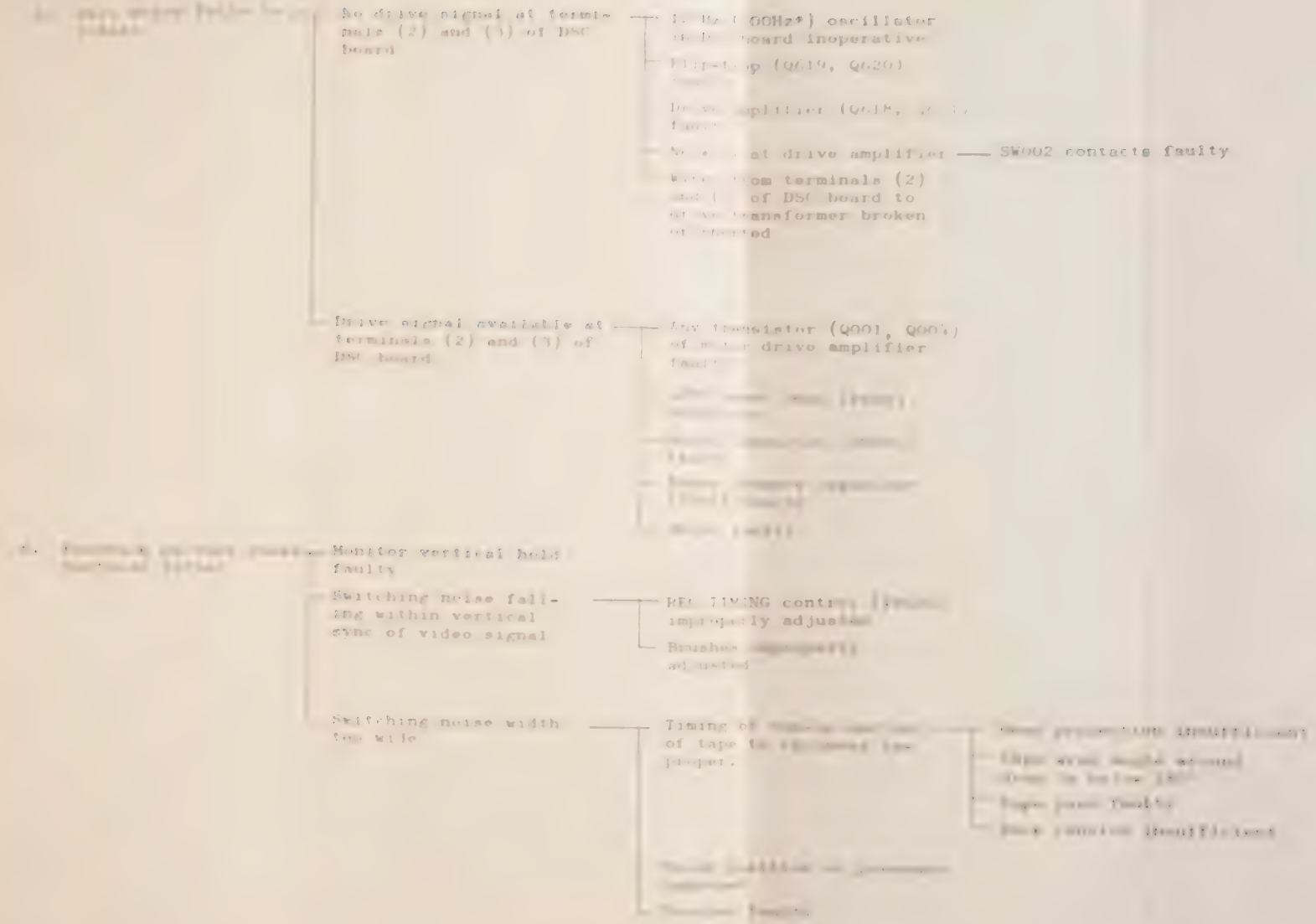
MODEL SV-700EC(ES)
A CHASSIS ASSEMBLY

MODEL SV-700UC(US),EC(ES)

MOTOR DRIVE AMP ASSEMBLY

(Troubles which may occur relatively frequently)

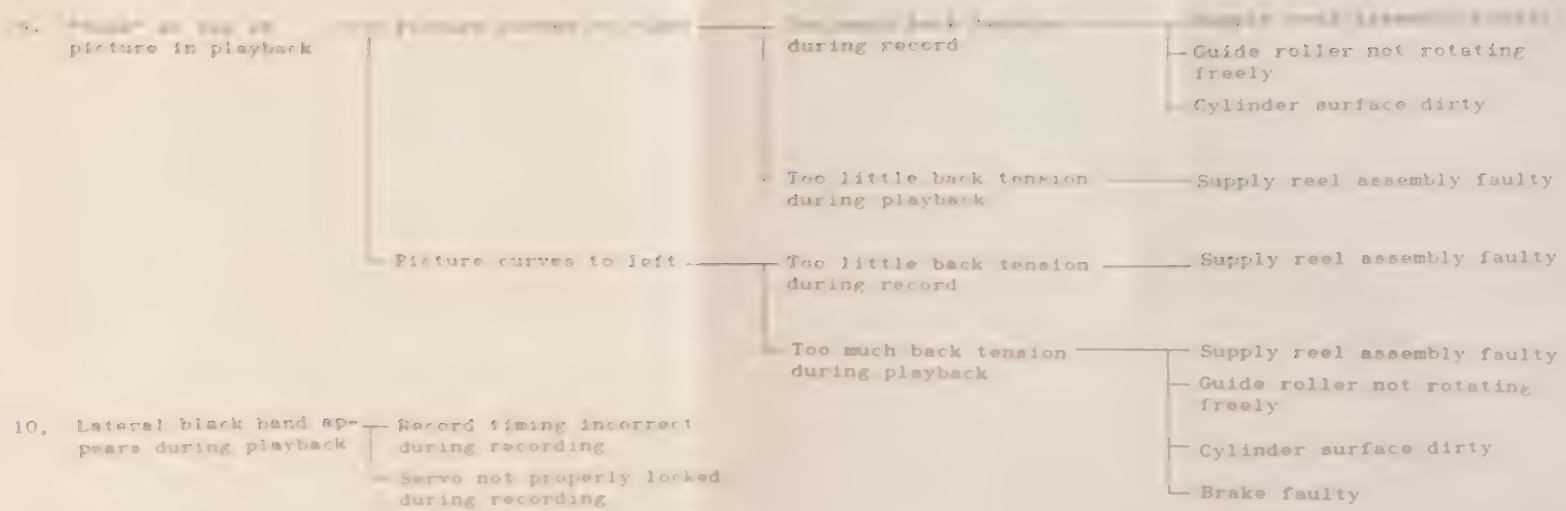

Power cord broken
Power input connector faulty
Power switch faulty
Fuse burnt out
Loose contact with wall outlet
No B/W picture
Video level meter fails to respond
Operation lever at [ ] A
No video modulator input
No +12V at modulator
Video level meter deflects
Modulator faulty (except meter circuit)
No FM signal at demodulator input
Demodulator input wire broken or shorted


No drive signal at terminals (2) and (3) of DSC board
Drive signal available at terminals (2) and (3) of DSC board
SW002 contacts faulty
Monitor vertical hold faulty
Switching noise falling within vertical sync of video signal
Switching noise width too wide

7. Picture shows horizontal instability
- Monitor horizontal hold faulty
- No control track pulse
  - Tape and control track head in poor contact
  - Control track head dirty
  - No signal at control track head in the REC mode
    - Wire from DSC board to control track head broken or shorted
    - K601 faulty
    - Any transistor (Q601, Q604) at DSC board faulty
- Belt position or phase advance capacitor incorrect
- 120Hz (100Hz*) oscillator frequency incorrect at recording
- Tape pass faulty
  - Supply reel back tension wrong
  - Cylinder surface dirty
  - Pinch roller pressure insufficient
  - Pinch roller worn or dirty

8. Beat appears on picture
- In the STOP mode (E-E picture)
  - External interference
    - BALANCE control (VR401) at demodulator improperly adjusted
    - Limiter balance improper
    - CARRIER control (VR302) at modulator improperly adjusted
  - Sound from TV signal leaks into picture
  - Carrier leakage from demodulator
  - Input level too high
- In the REC mode (E-E picture)
  - External interference
  - Erase signal leakage
  - Carrier leakage from demodulator (Refer to "E-E mode")
- In the PB mode
  - Previously recorded signal not fully erased
    - Poor contact between erase head and tape
    - No erase signal
      - Erase oscillator not working (No +12V)
      - Erase head wire broken
    - Erase head faulty
  - Carrier leakage from demodulator (Refer to "E-E mode")
  - External interference

* SV-700EC, ES only


picture in playback
during record
Guide roller not rotating freely
Cylinder surface dirty
Too little back tension during playback
Supply reel assembly faulty
Picture curves to left
Too little back tension during record
Supply reel assembly faulty
Too much back tension during playback
Supply reel assembly faulty
Guide roller not rotating freely
Cylinder surface dirty
Brake faulty
10. Lateral black band appears during playback
Record timing incorrect during recording
Servo not properly locked during recording
11. Capstan motor fails to rotate
Motor wiring faulty
Tape end switch (SW003) faulty
Connector (CN001) faulty
Phase advance capacitor (C002) faulty

mode
Meter responds
No +12V at AUDIO board terminal (6)
Audio level control VR102-2 faulty
AGC level control VR401 improperly adjusted
Audio amplifier (Q701, Q706) faulty
+12V wiring faulty
Input or output wiring faulty
Loose contact of TV connector (CN101)
Meter responds
Output wiring faulty or shorted
Emitter follower (Q707) circuit faulty
Loose contact of TV connector (CN101)
13. No audio recorded (E-E mode normal)
Wiring to audio head faulty or shorted
Audio head dirty
Audio head faulty
Poor contact between tape and audio head
adjusted
No head bias
Oscillator faulty
K701 faulty
14. No audio on playback
Meter responds
Emitter follower (Q707) faulty
Meter does not respond
Audio head dirty
K701 faulty
Q707 faulty
adjusted

Jigs, Gauges, Tools for Servicing

I. Jigs, Gauges, etc.

No.	Item	Qty.	Remarks
I-1	Video head replacement jig	1 set	For 180° division of video heads
	Consists of :		
	Frame	1	
	Type-C optical unit	2	
	Illuminator	2	
	Power supply for illuminator	1	
	Case	1	
-2	Tip projection gauge	1 set	
	Consists of :		
	Small tester	1	
	Support for small tester	1	
-3	Head holder positioning jig	1	For 180° division of video heads
-4	Test stand	1	For mount of tape deck removed from cabinet
-5	Dial tension gauge (100g)	1	For back tension of supply side and for tension arm spring adjustment
-6	Linear tension gauge (500g)	1	
	" (2000g)	1	For pinch roller presser
-7	Torque driver (5000g)	1	For fliction of reel holder assembly (between B and C) and for break torque
-8	Tape splicer	1	

No.	Item	Qty.	Remarks
I-9	Tape guide gauge	1	For proper tape passing
	Consists of :		
	Height checking gauge No.1	1	
	" No.2	1	
-10	Eye Gauge	1	For developed tape pattern
-11	Lapping tape #12000	3 m	For video head lapping
-12	Tape development set	1 set	For tape pattern development
	Consists of :		
	Container (70 - 80ϕ)	1	
	Iron powder	1	Solvent naphtha may be used as developer
-13	Reference tape	1	For interchangeability adjustment
-14	Shorting link	1	For DSC frequency adjustment
-15	Deviation checker	1	For frequency deviation and clipper adjustment of MOD
-16	Volt-ohm-milliammeter (SH-63TR)	1	

II. Special Tools

No.	Item	Qty.	Remarks
II-1	Eccentric screwdriver	1	For 180° division of video heads
-2	L-shaped hexagon bar wrench for 2.6mm socket head bolt.	1	For tip projection adjustment at 180° division
-3	Inclined cone guide adjustment screwdriver	2	For interchangeability adjustment
-4	Wrench with single head for 2mm nut	2	For nuts holding break wire link
-5	Interchangeability adjustment wrench	1	
-6	Deck lifter	2	For removal of deck from cabinet
-7	Cleaner	1 set	
	Consists of :		
	Cleaning cloth	20	
	Slip ring cleaner	1	
-8	Box wrench for variable resistor nut	1	
-9	Video head lifting screw	1	

III. Standard Tools

No.	Item	Qty.	Remarks
III-1	Phillips screwdriver for 2mm screw	1	
-2	Phillips screwdriver for 3mm screw	1	
-3	Phillips screwdriver for 4mm screw	1	
-4	Hexagon box wrench for 3mm nut	1	
-5	Hexagon box wrench for 4mm nut	1	
-6	Hexagon box wrench for 5mm nut	1	
-7	Hexagon bar wrench for 4mm socket head screw	1	
-8	Hexagon bar wrench for 4mm socket head bolt.	1	
-9	Jeweler's screwdriver	1	
-10	Screwdriver (Large)	1	
-11	" (Medium)	1	
-12	" (Small)	1	
-13	Long-nose pliers	1	
-14	Diagonal cutting pliers	1	
-15	Tweezers	1	
-16	Soldering iron (40 W)	1	
-17	Solder (1 ϕ)	1	
-18	Contact point polisher	1	For relay
-19	E-ring fixing tool	1 set	3-sizes
-20	Adjusting bender	1	For relay
-21	Box wrench for earphone jack	1	

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